

EXHIBIT A

**REPLY DECLARATION OF
DENNIS W. CARLTON,
ALLAN L. SHAMPINE,
AND HAL S. SIDER
IN SUPPORT OF AT&T INC.**

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

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In the Matter of)	
)	
Special Access Rates for Price Cap Local)	WC Docket No. 05-25
Exchange Carriers)	
)	
)	RM-10593
)	
AT&T Corp. Petition for Rulemaking to)	
Reform Regulation of Incumbent Local)	
Exchange Carrier Rates for Interstate)	
Special Access Services)	
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**REPLY DECLARATION OF DENNIS W. CARLTON,
ALLAN L. SHAMPINE AND HAL S. SIDER**

February 24, 2010

I. INTRODUCTION AND SUMMARY OF CONCLUSIONS

A. Qualifications

Dennis W. Carlton

1. I am the Katherine Dusak Miller Professor of Economics at the Booth Graduate School of Business at the University of Chicago. I received my A.B. in Applied Mathematics and Economics from Harvard University and my M.S. in Operations Research and Ph.D. in Economics from the Massachusetts Institute of Technology. I have served on the faculties of the Law School and the Department of Economics at The University of Chicago and the Department of Economics at the Massachusetts Institute of Technology. I specialize in the economics of industrial organization, which is the study of individual markets and includes the study of antitrust and regulatory issues. I am co-author of the book Modern Industrial Organization, a leading text in the field of industrial organization, and I also have published numerous articles in academic journals and books. In addition, I am Co-Editor of the Journal of Law and Economics, a leading journal that publishes research applying economic analysis to industrial organization and legal matters, and serve, or have served, as an editor of a variety of other scholarly journals.

2. In addition to my academic experience, I am a Senior Managing Director of Compass Lexecon, a consulting firm that specializes in the application of economics to legal and regulatory issues. From October 2006 through January 2008, I served as Deputy Assistant Attorney General for Economic Analysis, Antitrust Division, U.S. Department of Justice. I also served as a Commissioner of the Antitrust Modernization Commission, created by Congress to evaluate U.S. antitrust laws. I have provided expert testimony before various U.S., state and federal courts, the U.S. Congress, a variety of state and federal regulatory agencies and foreign tribunals and have served as a consultant to the Department of Justice, the Federal Trade Commission and other government agencies. I have written and consulted on a wide variety of

telecommunications issues. A copy of my curriculum vita is attached as Exhibit 1 to this declaration.

Allan L. Shampine

3. I am a Vice-President of Compass Lexecon. I received a B.S. in Economics and Systems Analysis from Southern Methodist University and an M.A. and Ph.D. from the University of Chicago. I have been with Compass Lexecon (formerly Lexecon) since 1996. I specialize in applied microeconomic analysis and the economics of telecommunications and payment systems. I am editor of the book Down to the Wire: Studies in the Diffusion and Regulation of Telecommunications Technologies. I have published a variety of articles on telecommunications and network industries in professional economics and legal journals, have provided economic testimony on telecommunications issues before the Federal Communications Commission (“FCC”) and state commissions, and have spoken on telecommunications and network industries in a variety of forums. A copy of my curriculum vita is attached as Exhibit 2 to this declaration.

Hal S. Sider

4. I am a Senior Vice-President of Compass Lexecon. I received a B.A. in Economics from the University of Illinois and a Ph.D. in Economics from the University of Wisconsin (Madison). I have been with Compass Lexecon (formerly Lexecon) since 1985, having previously worked in several U.S. government positions. I specialize in applied microeconomic analysis and have performed a wide variety of economic and econometric studies relating to industrial organization, antitrust, and competition issues. I have published a number of articles in professional economics journals on a variety of topics and have testified as an economic expert on matters relating to industrial organization and antitrust, among other topics. In addition, I have provided economic testimony on a variety of telecommunications issues

before the FCC and various state public utility commissions. A copy of my curriculum vita is attached as Exhibit 3 to this declaration.

B. Overview and summary of conclusions

5. Carlton and Sider filed a declaration in this proceeding on January 19, 2010, which concluded, among other things, that:¹

- The FCC’s analytical framework for identifying areas where LECs should have pricing flexibility is based on sound economic principles and correctly recognizes the competitive significance of firms that have made sunk investments in facilities that can be used to provide alternative access services. The FCC’s use of fiber-based collocations for determining the existence of sunk facilities is appropriate and workable, and the FCC’s determination of pricing flexibility on an MSA-wide basis is reasonable given, among other things, the limitations of available data.
- The FCC’s pricing flexibility regime has, in effect, become relatively more restrictive over time in identifying areas where pricing flexibility should be granted. Because the FCC’s pricing flexibility criteria do not account for any competition other than fiber-based collocations, there are a number of areas where LECs do not have full pricing flexibility today but where they face more competition than would have been required for pricing flexibility when the rules were first promulgated.
- Available data indicate that the FCC’s approach is working reasonably well, with special access prices falling and substantial entry occurring under the current framework. Based on the available data, the FCC could reasonably conclude that

1. Declaration of Dennis W. Carlton and Hal S. Sider, January 19, 2010 (“Carlton/Sider Declaration”), ¶ 5.

its current pricing flexibility rules are working as intended and that no further investigation is necessary. But if the FCC considers revisions to its pricing flexibility rules, that inquiry should account for all sources of competition faced by LECs in the provision of special access services. In particular, as explained more fully in our prior Declaration, such efforts should account for the availability of dedicated access services provided by wireless and cable firms. Also, additional data collected from CLECs should include information both on buildings connected to their networks as well as buildings that can be reached by extensions from those networks because CLECs can actively compete to supply many buildings that they do not currently serve.

- There is no economically sound basis to the claims that LECs are earning excessive profits on special access services. Special access is just one of many services provided using LECs' networks, and the costs of providing special access services cannot be uniquely identified. Economists have also recognized that it is difficult if not impossible to use accounting data to infer that firms have market power, even outside of the complications that arise in the presence of joint products. More specifically, the FCC's ARMIS data do not provide a reliable basis for setting price caps and/or determining the rate of return earned by LECs on special access services.
- There is no economically sound basis to the claims that the terms and conditions contained in LEC special access tariffs providing discounts harm special access competition. The standard economic framework for analyzing when discounts adversely affect competition can be applied to evaluation of the terms and conditions of LEC discounts. Discounts are generally beneficial to consumers

and we are not aware of any evidence that identifies any harm to consumers resulting from these terms and conditions in LEC special access contracts.

6. We have reviewed the comments filed in this proceeding and have been asked by counsel for AT&T Inc. to respond to comments that propose significant changes to the analytical framework currently used by the FCC to regulate special access services and thus oppose the current regulatory regime (“opponents”).

7. Most opponents agree that “permanent” changes to the existing rules must be based on hard evidence about competitive circumstances.² However, even before any data are collected and analysis undertaken, many opponents argue the FCC must adopt “interim” regulation. For example:

- Sprint argues that the FCC should, prior to the completion of this docket, (1) eliminate Phase II pricing flexibility; (2) adopt a 5.3 percent X-factor for price cap regulation; and (3) consider prohibiting certain terms and conditions in LEC special access contracts.³
- PAETEC argues that the FCC should impose interim rules that (1) freeze special access rates at current levels; (2) reduce any special access rates in price flex areas that exceed rates charged in price cap areas; (3) suspend additional grants of pricing flexibility until a new framework for regulating special access is adopted; and (4) adopt a 5.3 percent X-factor for price cap regulation.⁴

2. See, for example, Declaration of Bridger M. Mitchell, January 19, 2010 (“Mitchell Declaration”), ¶ 23 (“In order to craft well-founded revisions to price caps and price flexibility regulations, the Commission should gather additional evidence on conditions in special access markets....”).

3. Comments of Sprint Nextel Corporation, January 19, 2010 (“Sprint Comments”), p. 46.

4. Comments of PAETEC Holdings Inc.; TDS Metrocom, LLC; U.S. Telepacific Corp. and MPower Communications Corp., both D/B/A Telepacific Communications; Masergy Communications, Inc.; and New Edge Network, Inc., January 19, 2010 (“PAETEC Comments”), pp. ix-x. PAETEC’s comments appear to be directed at list rates.

- Level 3 argues that the FCC should impose interim regulation by means of a “true freeze” in special access rates, which it defines as mandating that customers be allowed “to purchase interstate special access services at an *effective rate* that is no less favorable than the rate at which the customer purchases such services as of the date of an order adopting such interim relief.”⁵

8. As we describe in this Reply Declaration, these proposals for “interim” rules are not based on sound economics. Generally, these proposals ignore the evidence described in our initial Declaration that the FCC’s approach is working reasonably well. At the same time, opponents’ calls for immediate re-regulation are based on flawed data, inaccurate benchmark comparisons and an unrealistic view of regulators’ ability to set “competitive” prices. They are, in effect, requests for a return to a failed cost-based regulatory regime.

9. Additionally, opponents argue that the FCC should make “permanent” changes in its regulatory regime for special access. As discussed below, opponents’ proposals for “permanent” changes are flawed, would be administratively burdensome, would not gather the appropriate data (ignoring intermodal competition by fixed wireless and cable providers) and do not apply sound economic theory. For example, their proposals misapply the Horizontal Merger Guidelines’ methodology.

10. Furthermore, in proposing “permanent” changes to the FCC’s pricing flexibility framework, opponents fail to address the potentially large consequences of errors by regulators. In recent years, consumers have benefited from unprecedented innovation and growth in telecommunications services. Wireless and Internet services have fundamentally altered modern

5. Comments of Level 3 Communications, LLC, January 19, 2010 (“Level 3 Comments”), p. 22. (Emphasis in original.)

economic activity and both of these services are provided using infrastructures that rely on special access services.⁶ The convergence of wireless and Internet technologies in 4G technologies that are now being deployed, as well as other expansions of high-speed data networks, will require large-scale and on-going investment in telecommunications infrastructure – roughly \$30 billion per year according to one estimate commissioned by the FCC.⁷ An inflexible regulatory framework of the type opponents appear to advocate that fails to provide the appropriate incentives for continued investment and innovation has the potential to result in enormous harm to consumer welfare.⁸

11. In short, there is nothing in opponents' comments that leads us to alter any of the opinions expressed in our January 19 report. Based on our review of these comments, we conclude that:

- Because any administratively feasible pricing flexibility regime will be imperfect, imperfections in the current regulatory regime alone do not justify abandoning it. Opponents do not present any persuasive evidence that their proposed analytical frameworks, and the complex and costly data collection and analysis that would be required to substantially revise the current regulatory framework would be likely to improve consumer welfare. In fact, the available evidence indicates that

6. These services are still growing rapidly. A recent study conducted for the FCC by the Columbia University Institute for Tele-Information predicted that North American consumer Internet traffic would increase seven-fold between 2008 and 2013. Robert Atkinson and Ivy Schultz, "Broadband in America, Preliminary Report Prepared for the Staff of the FCC's Omnibus Broadband Initiative," Columbia Institute for Tele-Information, November 11, 2009 ("CITI"), p. 49. Similarly, smart phone traffic growth at AT&T grew 4,932 percent between 2Q 2006 and 2Q 2009 and global mobile IP traffic is expected to grow roughly seven-fold between 2009 and 2013. Morgan Stanley, "Economy + Internet Trends," October 20, 2009, Web 2.0 Summit – San Francisco, pp. 55, 57.

7. CITI, p. 66.

8. Such changes may also increase uncertainty among market participants about the FCC's commitment to incentive-based regulation which may also affect incentives for investment.

the FCC's current regulatory framework is working reasonably well. In particular, the prices paid by customers for special access service in areas where pricing flexibility has been granted have declined substantially.

- The analyses relied on by opponents to support their arguments that the current regime should be changed are based on flawed data and inappropriate benchmark comparisons.
- Opponents' proposals to gather data on a building by building basis would be administratively burdensome. Moreover, opponents' proposals to analyze market definition and market power based on the Horizontal Merger Guidelines, including HHI analysis, would be economically inappropriate.
- The data collection proposed by opponents to the current regulatory framework is based on the unverified premise that there is no need to collect data about intermodal competition or the ability of CLECs to extend their networks. Thus, the data they propose to collect could not, for example, be used to disprove their view that cable and wireless carriers do not provide competition for LEC-provided special access services. Should the FCC choose to continue to investigate whether to modify its pricing flexibility triggers, it would be inappropriate to assume the results of the analyses by excluding data on intermodal competition or the ability of providers to extend their networks.
- There is no basis for the 5.3 percent X-factor that opponents propose be immediately incorporated into price cap formulas. Opponents provide no evidence that this rate, estimated 15 years ago, is any more accurate than the current rate. There have been many changes in the telecommunications industry since that time, some of which would suggest a lower X-factor.

- Opponents fail to demonstrate harm to competition from the terms and conditions of LEC special access contracts and tariffs that result in lower prices for consumers. The types of terms and conditions which opponents complain about are commonplace and can benefit consumers and enhance economic efficiency in a variety of ways. There is generally no basis for questioning discounting practices absent a showing of the rare case in which exclusion or predation is successful and leads to higher prices. Here, available evidence indicates that there has been widespread entry and that LECs' rivals have continued to invest in new facilities.

12. The remainder of this Reply Declaration is organized as follows. Section II describes how opponents of the FCC's current regulatory regime rely on flawed data and inappropriate comparisons. We also review evidence on special access purchasing patterns and the growth of competitive alternatives to LEC special access services. Section III discusses how there is no basis to assume that proposed alternatives for identifying where pricing flexibility should be granted would be superior to the current regulatory regime. Section IV describes how proposed revisions to the X-factor are without any credible economic basis. Finally, Section V describes why discount plans should generally not be questioned absent a showing of predation or exclusion, and how opponents have failed to demonstrate any competitive harm from terms and conditions in LEC special access tariffs that result in price reductions.

II. OPPONENTS OF THE FCC'S SPECIAL ACCESS REGULATIONS RELY ON FLAWED DATA AND INAPPROPRIATE COMPARISONS.

13. Opponents to the FCC's current regulatory framework, which include many competitors of AT&T, argue that the FCC's current regulatory framework for granting pricing

flexibility is flawed and should be substantially revised. In support of their arguments, opponents claim that:

- Special access prices have increased in areas where pricing flexibility has been granted⁹;
- Special access prices are high relative to various benchmark rates (DSL, cable modem, NECA special access tariffs, U.K. tariff rates)¹⁰;
- Special access prices are above costs based on ARMIS data or TELRIC-based cost measures.¹¹

This section shows that the price and cost benchmarks offered by opponents are flawed and do not justify changes to the current regulatory regime.

14. In addition, opponents contend that there is limited competition to LECs' special access services.¹² We describe below how, when making such arguments, opponents improperly ignore availability of alternatives today and dismiss the importance of entry by new firms and intermodal competition.

A. Opponents incorrectly state that special access prices have gone up in areas with Phase II pricing flexibility.

15. Many opponents claim that special access prices have increased in areas where pricing flexibility has been granted.¹³ However, these claims are typically based on analysis of

9. Mitchell Declaration, ¶ 110; Comments of the NoChokePoints Coalition, January 19, 2010 ("NoChokePoints Comments"), pp. 19-20.

10. Mitchell Declaration, ¶¶ 111-112; NoChokePoints Comments, pp. 23-24; Comments of TW Telecom, January 19, 2010 ("TW Telecom Comments"), p. 5; PAETEC Comments, p. 8; Sprint Comments, pp. 28-29.

11. Mitchell Declaration, ¶¶ 96-106; NoChokePoints Comments, pp. 22, 24-27; TW Telecom Comments, p. 5.

12. Mitchell Declaration, ¶¶ 61-62.

13. Mitchell Declaration, ¶ 110; NoChokePoints Comments, pp. 19-20;

tariff (list) prices and fail to adequately account for the widespread use of discounts in special access rates. It is inappropriate to ignore the effect of discount plans that are made possible only through the FCC's pricing flexibility regime. These discounts are available both through custom tariffs and overlay discount plans which provide customers with discounts based on aggregate purchases in a variety of areas. Actual prices paid by customers, not list prices, should be evaluated in attempting to make inferences about the performance of the FCC's framework for special access regulation.

16. Certain opponents have pointed to analyses by the GAO and NRRI to support their claim that prices paid by customers have increased.¹⁴ The GAO and NRRI reports both analyze LEC list prices as well as some limited measures of non-list prices, such as the average revenue per unit ("ARPU") for special access services.¹⁵ The data in these studies are less comprehensive than the AT&T data reported in our earlier statement.¹⁶ Opponents pick and choose data from these reports to support their claims that the FCC's pricing flexibility framework has resulted in increasing prices, but they do not cite other evidence in those reports that does not support their claims.

17. The list price data in the GAO and NRRI studies are, as noted above, not useful for making comparisons of actual special access prices paid. Thus, for the reasons already

14. Mitchell Declaration, ¶ 110; NoChokePoints Comments, p. 19.

15. ARPUs for circuits may vary for a variety of reasons, including differences in the lengths of transport segments, as well as their treatment under discount plans. However, ARPUs are a useful measure of the prices customers pay, particularly in the presence of discounts. For example, the NRRI report states that its analysis of discounted prices paid by buyers is "the best estimate of the actual prices paid by large wholesale purchasers because these customers purchase a high percentage of their circuits at discounted rates." Peter Bluhm with Dr. Robert Loube, "Competitive Issues in Special Access Markets, Revised Edition," National Regulatory Research Institute, January 21, 2009 ("NRRI Report"), p. 59.

16. NRRI Report, pp. 58-61; GAO, "FCC Needs to Improve Its Ability to Monitor and Determine the Extent of Competition in Dedicated Access Services," November 2006 ("GAO Report"), Appendix II.

described, no weight should be given to these studies for the purpose of analyzing actual marketplace prices, which is the appropriate focus of the competitive analysis.

18. Opponents also mischaracterize the results of these studies. NRRI's non-list price data are limited, coming from only five purchasers of special access services and two LEC sellers of special access service.¹⁷ NRRI did not claim that these limited data were representative of overall special access pricing patterns, and NRRI cautioned that its pricing analyses "do not support any clear conclusions about price trends. Some data suggest rising prices, while other data suggest declining prices. Data quality could well be the reason for these ambiguities."¹⁸ The data submitted by buyers showed uniformly decreasing prices. NRRI reported that "[e]ach of the discounted rates we measured declined from 2006 to 2007. One possible explanation is that competition is driving prices down for customers purchasing at discounted prices."¹⁹ While NRRI reported that some of the seller data indicated nominal price increases for some periods and elements of special access service, those data did not include all discounts which customers can receive (for example, the Verizon data included only "generally available discount sales" without any "overlay" or "contract tariff" discounts).²⁰ We note that NRRI does not dispute that adjusting for inflation shows declines for at least Verizon even for these partially discounted prices. NRRI stated that it "do[es] not dispute Verizon's claim" that "its prices have been

17. The purchasing firms are Covad, Sprint, T-Mobile, TW Telecom, and XO. Covad provided pricing data only for DS-3s. T-Mobile provided data only for 10 MSAs. TW Telecom provided no pricing data on its purchases other than footnotes as to discount percentages from rack rates. TW Telecom also submitted one year of data on its sales of special access. The LECs are Verizon and Embarq. NRRI Report, pp. 36-37.

18. NRRI Report, p. 67.

19. NRRI Report, p. 59.

20. NRRI Report, pp. 37 (note 148), 60-61, and Appendix B, A-3.

declining, both DS-1 and DS-3 levels, ‘by 4% and 5% annually on a real basis, respectively, between 2001 and 2007.’”²¹

19. The GAO’s ARPU data are limited as well, but its analysis also found that actual prices paid by customers have fallen, not risen as opponents suggested. The GAO report states that “[a]verage revenue for channel terminations and dedicated transport for DS-1 and DS-3 has generally decreased over time, although the decline in average revenue for channel terminations is larger in phase I areas compared with phase II areas.”²² Thus, the GAO’s analysis is consistent with the evidence submitted by LECs that actual prices paid by customers have declined in areas where pricing flexibility has been granted.

20. More detailed data have been submitted by AT&T, Verizon, Qwest and Embarq in this proceeding. Each company’s data show that special access prices actually paid by customers have fallen in areas subject to pricing flexibility and price caps.²³ As we discussed in our initial Declaration, AT&T’s average revenues for DS1 circuits in Phase II areas, which include all sales rather than sales in a sample of areas, fell 13 percent between 2001 and 2004 and another 13 percent between 2004 and 1Q 2007. Similarly, average revenues for DS3 circuits fell 5 percent between 2001 and 2004 and another 10 percent between 2004 and 1Q 2007.²⁴ In

21. NRRI Report, p. 61.

22. GAO Report, p. 14.

23. AT&T Ex Parte, February 21, 2008, pp. 2-3. See also Declaration of Timothy J. Tardiff and Dennis L. Weisman in Support of the Comments of Qwest Communications International Inc., January 19, 2010 (“Tardiff/Weisman Declaration”), p. 9 (“While special access demand has been steadily growing, real (inflation-adjusted) prices for TDM-based DS_n-level special access services have been *decreasing*.”) (Emphasis in original. Internal citations omitted.).

24. Carlton/Sider Declaration, ¶ 53.

real terms (i.e., adjusting for inflation), the decline between 2004 and 1Q 2007 for DS1 service was 24 percent, and for DS3s was 21 percent.²⁵

21. Sprint suggests that reductions in average prices are due to discount plans and/or other shifts such as increases in the share of sales accounted for by higher capacity circuits (which sell at a lower average price).²⁶ As discussed above, discount plans should be accounted for in evaluating price changes and the effectiveness of the current regulatory regime.

Furthermore, the data submitted by the LECs show that observed price decreases are not simply attributable to changes in the mix of high and low capacity circuits. These data show that prices paid for both DS1 and DS3 services have fallen.²⁷

B. Opponents compare LEC prices to improper benchmarks.

22. Some opponents attempt to compare list prices for special access services to prices for “benchmark” services to support their claims that LECs have market power or that LEC rates are not “just and reasonable.” These benchmarks fall into three groups: “comparable” products (DSL, cable modems), other regulated tariffs on special access (NECA tariff rates, U.K. tariff rates) and “cost-based” measures (UNEs, ARMIS). These comparisons are improper. By contrast, Qwest proposes a benchmark of special access prices in areas that are found to be subject to effective competition.²⁸ This approach is more promising as a matter of economic theory, although implementation may be difficult.

25. Carlton/Sider Declaration, ¶ 53.

26. Mitchell Declaration, ¶ 103.

27. AT&T Ex Parte, February 21, 2008, p. 3.

28. Comments of Qwest Communications International Inc., January 19, 2010 (“Qwest Comments”), pp. 6, 41.

1. Suggested price comparisons to “benchmark” products do not adjust for relevant differences.

23. Opponents claim that special access prices are above competitive rates because they are “high” relative to prices for residential DSL and cable modem Internet access services.²⁹ These claims implicitly assume, incorrectly, that residential DSL and cable modem Internet access services provide the same level of service quality as special access services. The proposed comparisons are inappropriate because opponents make no effort to account for differences in the characteristics of these services.

24. Residential DSL and cable modem Internet access services differ in many ways from special access. For example, opponents acknowledge that DSL and cable modem services are “best efforts” services with no guarantees of bandwidth delivered, ongoing performance, or reliability, but they do not make any effort to correct for such differences when comparing prices.³⁰ Furthermore, there are many other differences that opponents do not consider. For example:

- Residential DSL and cable modem Internet services typically are not symmetric services. That is, in contrast to special access, these services provide significantly more bandwidth to the customer than from the customer. Symmetric services are typically more expensive than non-symmetric ones.³¹

29. Mitchell Declaration, ¶¶ 111-112; NoChokePoints Comments, pp. 23-24.

30. See NoChokePoints Comments, p. 24 (“To be sure, the services are not identical, and these differences may justify some difference in price – but certainly not a ten-fold difference.”); Mitchell Declaration, note 65 (“The speeds provided by these incumbent LEC services are ‘best efforts’ rather than the guaranteed speeds provided in special access.”). See also TW Telecom Comments, p. 11 (“This conclusion is supported by evidence that HFC [cable modem] and wireless networks are not capable of providing the level of service (e.g., reliability, service guarantees) demanded by most business customers and delivered by special access services.”).

31. For example, SpeakEasy offers symmetric DSL as a small business service. This product is more than twice as expensive as SpeakEasy’s asymmetric small business DSL offering. See <http://www.speakeasy.net/business/adsl/> and <http://www.speakeasy.net/business/sdsl> (accessed February 3, 2010).

- Cable modems share bandwidth with other consumers, raising both reliability and security concerns. That is, the performance of one customer's service is dependent upon the usage of other customers. There are also security concerns when many different customers are sharing network capacity.³²
- Special access provides static IP addresses which are more suitable for web hosting than the dynamic (i.e., frequently changing) IP addresses provided by residential DSL and cable modem services.³³ While it is possible to provide web hosting with a dynamic IP address, doing so generally involves purchasing services from a third party that will regularly update routing tables as the IP address is changed.³⁴
- Residential DSL services are typically available only over short distances and with performance that declines with distance.³⁵ Special access services, however, can be provided over long distances and have guaranteed performance.

NoChokePoints inappropriately compares a 10 mile DSL circuit with a residential

32. See, for example, U.S. Robotics Technical Paper, "Digital Subscriber Line (DSL): Using Next Generation Technologies to Expand Traditional Infrastructures," available at <http://www.usr.com/download/whitepapers/8500-wp.pdf> (accessed February 3, 2010), p. 3: ("Because of the 'shared resource' aspect of cable modems, actual rates will vary according to traffic conditions and the type of modem being used; security could also be an issue for some users of cable modems. ").

33. See AT&T Ex Parte, February 21, 2008, p. 4.

34. For example, AT&T offers a small business DSL service with a static IP address to allow web server or email server applications. See <https://swot.sbc.com/swot/dslMassMarketCatalog.do?do=dslProductPage&offerId=78203&gridId=dslhighSpeedinternetTable> (accessed February 3, 2010). One example of a service which allows web hosting over a dynamic IP address is Dynamic Name Services. <http://www.dnsdyn.com/> (accessed February 3, 2010). Some cable companies, such as Cox, offer small business cable modem services with static IP addresses. See <http://ww2.cox.com/business/santabarbara/data/business-internet.cox> (accessed February 3, 2010).

35. AT&T Ex Parte, February 21, 2008, p.4.

DSL circuit which is not typically available over such a distance and which will not provide a similar bandwidth at even a fraction of that distance.³⁶

- DSL and cable providers often offer business versions of DSL and cable modem service that have different characteristics than their residential services and are priced differently.³⁷ AT&T, for example, offers residential DSL, small business DSL and enterprise DSL.³⁸ Dr. Mitchell compares AT&T residential DSL service priced at \$35 per month to Sprint's average DS1 circuit for which it claims to pay \$390 per month.³⁹ However, AT&T's enterprise symmetric DSL with 1.5 Mbps (i.e., DS1 bandwidth) has a list price of \$399.95 per month.⁴⁰

25. Opponents assert that such product differences cannot justify all of the observed price differences, though they provide no analysis or evidence to support this assertion.⁴¹ In fact, one would expect services with quality differences to have different prices, and those price differences can be significant.⁴² As discussed earlier, the business versions of these services are

36. NoChokePoints Comments, p. 23.

37. See, for example, <http://www.comcast.com/Corporate/Learn/Business/business.html?lid=7LearnBusiness&pos=Nav> (accessed February 5, 2010).and Section III.D.

38. <http://www.corp.att.com/dsl/> (accessed February 5, 2010).

39. Mitchell Declaration, ¶ 112.

40. AT&T pricing data. The \$399.95 figure is the list price, as is the \$35 per month cited by Dr. Mitchell for the residential DSL service. See also AT&T Ex Parte, February 21, 2008, p. 5, reporting a \$279.96 list price for a 1.5 Mbps symmetric business class DSL service.

41. Indeed, some opponents cite the price differences as evidence that DSL and cable modems are in a different product market than special access. TW Telecom Comments, p. 12 ("If cable modem and DSx services were viewed as substitutes for the majority of customers, providers of DSx service could not maintain substantially higher prices and retain their customer base.").

42. SpeakEasy, for example, markets its T-1 service with "service advantages" such as "T1 traffic gets priority routing over DSL traffic," "99.99% uptime service-level guarantee and 4 hour repair time SLA," "Not burst-able, or limited by lower bandwidth Information Rates that don't approach advertised speeds," and "Mission-Critical Performance." <http://www.speakeasy.net/business/t1/> (accessed February 3, 2010). As discussed, SpeakEasy's ADSL, SDSL and T-1 services are all priced and marketed differently.

likely more similar to special access than the residential versions. However, to the extent that opponents' claims that residential DSL and cable modem prices are lower than special access prices are meaningful, i.e., that DSL and cable modems are similar products to special access, that would indicate that cable modems and DSL provide additional intermodal competition to special access services.

2. Suggested price comparisons to NECA or U.K. special access tariffs are inappropriate.

26. Some opponents claim that LEC special access rates are above other regulated special access rates (NECA Tariff #5 and U.K. special access tariffs), which they say implies that FCC special access regulation is ineffective. Opponents assume when making their comparisons that the lower regulated rate necessarily provides an approximation of competitive prices. The opponents provide no basis for their implicit assumption that regulators set price at the competitive level. In fact, regulators may set rates below the competitive level. As discussed below, if regulators set prices below the competitive levels, then investment by both LECs and rivals will be deterred resulting in harm to consumers. In any case, the comparisons made by opponents are inappropriate.

27. PAETEC compares tariffs filed by NECA on behalf of its rural LECs members, which are subject to rate of return regulation, with LEC tariffs. More specifically, PAETEC compares list prices for NECA in density Zone 1 with a one-year term to the list prices that different LECs offer in density Zone 1 of Phase II areas with a one-year term. PAETEC claims that price cap LECs' special access tariff rates exceed the rates in NECA Tariff #5, and argues that since "the BOCs' pricing flexibility rates exceed the rates offered by rate-of-return carriers [this] demonstrates that the BOCs' rates are excessive and generating unreasonable profits."⁴³

43. PAETEC Comments, pp. 8-9, Exhibit 1.

28. For reasons discussed above, PAETEC's comparisons are inappropriate because they do not reflect the actual prices paid by price cap LEC special access customers. Rural LEC members of NECA are subject to rate of return regulation and have limited ability to offer volume discounts. Although they do offer term discounts, NECA members cannot offer contract tariffs and overlay discount programs which are available in LEC Phase II areas. Thus, the list prices of the firms that operate under NECA Tariff #5 are approximately equal to the prices customers actually pay. In contrast, the AT&T tariff rates used in the NECA comparisons do not reflect the average prices paid by AT&T customers, who typically obtain sizeable discounts to tariff rates.

29. We also understand that only eight of the more than 1,100 NECA carriers fall into the Zone 1 category, and PAETEC presents no evidence that the demand or cost conditions faced by these eight carriers are comparable to those of price cap LECs.⁴⁴ The small fraction of NECA carriers used in the PAETEC analysis suggests that they are unlikely to be representative of pricing for most of its members. Indeed, even if one compares list prices in this fashion, PAETEC's proposed benchmark is not robust. AT&T has provided us with a comparison of the NECA average rate (Zone 7) to LEC Zone 3 tariffs in the seven regions used by PAETEC (four for AT&T, two for Verizon and one for Qwest). LEC Zone 3 rates are typically the highest LEC tariff rates. This comparison shows that in four of the seven regions in the PAETEC analysis (including three of the four AT&T regions), LEC Zone 3 tariff rates are below the NECA average rate, even without accounting for overlay and contract tariff discounts.⁴⁵

44. For example, we understand that the ETS Telephone Company (En-Touch Systems Inc.), one of the eight, served only 1,451 households in 2008, consisting primarily of planned residential communities in the Houston area. <http://www.entouch.net/about/>, <http://www.entouch.net/regulatory/> (accessed February 11, 2010) and AT&T analysis.

45. Internal AT&T analysis.

30. With respect to the U.K. tariff comparisons, Sprint cites comments from BT Americas to support a claim that “special access prices in the United States are materially higher than the fully incremental cost-based rates that BT charges for comparable services in the United Kingdom....”⁴⁶ AT&T has previously filed evidence that BT Americas’ list price comparisons are flawed in a variety of ways. For example, BT Americas has compared circuits with two channel terminations in the United States to circuits with one channel termination and a “hand over” charge in the U.K.⁴⁷ However, these comparisons are between BT’s list prices and AT&T’s list prices.⁴⁸ As discussed above, given the presence of significant discounts made possible through price flexibility, the comparison of list prices is not appropriate here. AT&T has previously analyzed actual prices paid in the U.S. and U.K. and found that AT&T’s average revenue for circuits in the United States is lower than the average amount that AT&T pays to BT in the United Kingdom for similar circuits.⁴⁹

3. Opponents’ “cost-based” comparisons are inappropriate.

31. Opponents also claim margins on LECs’ special access services are too high when compared to ARMIS cost data or unbundled network element (“UNE”) rates based on the FCC’s total element long run incremental cost (“TELRIC”) standard.⁵⁰ However, both ARMIS data and cost estimates based on UNE TELRIC rates should not be used for these purposes.

46. Sprint Comments, pp. 28-29.

47. AT&T Ex Parte, November 4, 2009, p. 9.

48. Reply Comments of BT Americas, Inc., July 12, 2005, p. 18; and Declaration of Joseph Stith in UNE Remand Proceedings, September 30, 2004, Attachment 1.

49. AT&T Ex Parte, November 4, 2009, pp. 8-9.

50. Mitchell Declaration, ¶¶ 96-106; NoChokePoints Comments, pp. 22, 24-27; TW Telecom Comments, p. 5; Comments of Comptel, January 19, 2010 (“Comptel Comments”), p. 12. TELRIC is a methodology designed by the FCC to estimate forward looking economic costs. FCC, First Report and Order in the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers, FCC 96-325, August 8, 1996, ¶ 29.

ARMIS

32. Our initial Declaration addressed difficulties in using accounting data to measure special access costs, as well as the limitations of using ARMIS data for evaluating whether LEC special access prices are “too high.” Opponents have not advanced any new arguments that address the oft-noted shortcomings of the ARMIS data, although Economics and Technology, Inc. has submitted a paper reiterating claims that ARMIS is reliable. The shortcomings in that analysis are addressed in the Reply Declaration of Ron Hilyer. Here, we note that, as discussed in our initial Declaration, the presence of significant joint and common costs complicates measurement of special access profitability. In particular, there is no generally accepted economic methodology for allocating joint and common costs to particular services such as DS1 special access service.⁵¹ The economic literature also recognizes that it is difficult or sometimes impossible to use accounting measures of profitability to infer market power because, among other reasons, accounting definitions of capital and depreciation are different than economic definitions.⁵² Finally, the FCC’s discontinuation of the ARMIS data indicates that the FCC recognized that the ARMIS data were of limited utility.⁵³

UNEs

33. Dr. Mitchell argues that list rates for UNE DS1 and special access DS1 month to month rates are “directly comparable.”⁵⁴ However, such comparisons are inappropriate for determining whether LEC special access rates are “too high.”

51. Carlton / Sider Declaration, ¶¶ 75-76.

52. Carlton / Sider Declaration, ¶¶ 77-78.

53. Carlton / Sider Declaration, ¶¶ 79-82.

54. Mitchell Declaration, ¶ 102.

34. First, as discussed above, list price comparisons are inappropriate in the presence of widely used discount programs that are only available through price flexibility. Second, it is not clear whether UNE TELRIC prices actually provide a meaningful measure of forward looking economic costs. There is significant and ongoing dispute about whether UNE TELRIC prices are conceptually correct and whether they have been accurately calculated. As the FCC has acknowledged, the “TELRIC rules have proven to take a great deal of time and effort to implement, and have been the subject of extensive criticism.”⁵⁵ Prof. Carlton, along with Nobel Laureates Kenneth Arrow, Gary Becker and Robert Solow, have previously discussed those criticisms:

Many analysts have noted that the FCC’s methodology is flawed. In particular, they explain that TELRIC rates do not properly reflect all forward-looking costs, and thereby fail to provide a return sufficient to encourage investment in new technology. ... Analysts also have criticized the TELRIC methodology, as developed by the FCC, for not fully accounting for uncertainty associated with investment decisions....

The TELRIC methodology has problems in its implementation, as well as conceptual problems in design. First, in implementing the methodology, state PUCs must properly account for economic, and not simply physical, obsolescence. ...

[Also], the TELRIC approach does not fully account for risks faced by ILECs in developing successful services.⁵⁶

35. Moreover, attempts to implement TELRIC methodologies have yielded widely varying rates in different areas. The FCC has noted that the state public utility commission hearings that set UNE rates can result in “significant differences in rates from state to state, and

55. FCC, Notice of Proposed Rulemaking in the Matter of Review of the Commission’s Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers, FCC 03-224, September 15, 2003 (“UNE NPRM”), ¶15.

56. Report of Kenneth Arrow, Gary Becker, Dennis Carlton and Robert Solow on behalf of Verizon, November 18, 2003 (“Arrow, Becker, Carlton and Solow Report”), pp. 19-20.

even from proceeding to proceeding within a state. We are concerned that such variable results may not reflect genuine cost differences but instead may be the product of the complexity of the issues....”⁵⁷ As Profs. Arrow, Becker, Carlton and Solow explained:

While we would not expect identical prices across states, the observed variation appears to be too great to result from differences in costs alone....

Moreover, the abrupt and large changes in TELRIC rates that have occurred in the past could not have occurred if TELRIC rates everywhere were based on the FCC’s methodology without any arbitrariness or unpredictability.⁵⁸

36. Finally, Profs. Arrow, Becker, Carlton and Solow report instances where UNE rates were adjusted for political reasons. For example, the Maryland PUC required Verizon to reduce certain UNE rates despite acknowledging that Verizon was in “technical compliance” with TELRIC. Similarly, the Washington D.C. PUC “approved reductions in Verizon’s UNE rates, but noted that its approval ‘was not a determination of whether the rates are TELRIC-compliant, cost-based, or just and reasonable.’”⁵⁹ The FCC has reviewed UNE rates set by states as part of proceedings to allow LECs to offer long distance service. In those reviews, the FCC found that “major methodological mistake[s] ... that collectively could render rates outside the reasonable range that TELRIC would permit” were present in more than 70 percent of the 35 states reviewed.⁶⁰ Thus, comparisons of special access rates to UNE rates are inappropriate and do not support claims that special access rates are “too high.”

57. UNE NPRM, ¶ 6.

58. Arrow, Becker, Carlton and Solow Report, p. 17.

59. Arrow, Becker, Carlton and Solow Report, p. 18.

60. Arrow, Becker, Carlton and Solow Report, note 34.

4. Competitive benchmarks hold theoretical promise but could be difficult to implement in practice.

37. The use of a competitive benchmark price is a theoretically more promising approach. For example, suppose it were possible to observe the price of special access in a region that is known to be subject to competition. Qwest proposes using for this purpose rates in Phase II markets that have been shown through the gathering of additional data on competitive offerings to have significant competition.⁶¹ Then, one might be able to use the prices that customers pay in the area with known competition to evaluate whether prices in other areas significantly exceed that benchmark.

38. However, any attempt to undertake such an analysis would be complicated by a variety of factors. For example, any valid comparison should compare the prices actually paid by customers in the two areas, not list prices. Given the presence of significant discounts that are made possible only through price flexibility regulation, comparisons of list prices would be inappropriate. Also, to the extent possible, comparisons should account for differences in costs and demand conditions between areas. For example, differences in, say, geographic conditions may make deployment of special access facilities more expensive in one area compared to another. Similarly, there may be differences in demand and buying patterns across areas.

39. In analyzing apparent price differences across areas, the FCC should also bear in mind the asymmetric costs of making an error in any such analysis. As discussed more fully in Section III.A below, the costs of using such a benchmark analysis to set prices “too low” (which include deterring investment by both LECs and rivals) can be greater than the costs of setting

61. Qwest Comments, pp. 6, 41 (“Second, the Commission should collect and use ILEC rates in the samples Phase II markets that it confirms are competitive as benchmarks for assessing the reasonableness of rates in *non-Phase II* markets as well (i.e., price cap and Phase I markets).” “The Commission could select one or more of the sampled Phase II markets that are most comparable to the target market: for example, a market or markets with the same ILEC, in the same geographic region, with similar density, etc.”) (Emphasis in original).

prices “too high” (because entry and expansion may defeat prices set at “too high” a level).

Thus, the FCC should exercise caution when examining apparent price differences, particularly given the uncertainty in measuring prices and in controlling for factors such as cost differences that drive differences in competitive prices between areas.

D. Opponents improperly dismiss the competitive importance of new entry by wireless and cable firms.

40. Opponents claim that they can rely on CLECs for only a small fraction of their special access needs.⁶² For example, Sprint claims that it purchased 84 percent of its DS3 service and 98 percent of its DS1 service from incumbent LECs in 2007.⁶³ As a preliminary matter, it is not clear how Sprint calculated this figure. Sprint does not document how it accounts for intermodal alternatives so, for example, we do not know if Sprint included fixed wireless or cable alternatives in its count of DS1 and DS 3 services that it purchased in 2007. Moreover, it appears that these statistics are for both price cap and pricing flexibility areas, and thus provide no useful information about the effectiveness of the triggers. However, even if correctly calculated, it is unlikely that these data would be an accurate reflection of the state of current competition for special access services.

41. The relevant question is the range of competitive alternatives available to Sprint today and in the future, while Sprint’s reported data are largely a reflection of past purchases. Available evidence indicates that Sprint today makes extensive use of fixed wireless services, a

62. Mitchell Declaration, ¶ 62 (citing Sprint and Ad Hoc statements); Level 3 Comments, pp. 8-9. See also TW Telecom Comments, p. 11, claiming that cable and wireless services are not substitutes for special access services.

63. Mitchell Declaration, ¶ 62. See also Level 3 Comments, p. 8, where Level 3 makes a similar claim but with the percentages redacted. Level 3 also notes that “the Commission should focus on fleshing out this picture by obtaining comprehensive data that shows where competitive carriers may be able to apply meaningful pressure on the ILEC’s special access prices.” (p. 10)

new intermodal form of competition, to provide backhaul from its cell sites.⁶⁴ Furthermore, Sprint's 4G network is provided through Clearwire, which is majority-owned by Sprint, which uses wireless for 90 percent of its backhaul routes.⁶⁵ Sprint's increasing use of this technology demonstrates its competitive importance going forward. As we describe in more detail below, new intermodal competitors to traditional special access services have appeared and continue to invest and grow.

42. In addition, Sprint does not provide any information about the number or identity of responses it received from competitive suppliers in its historical or current bidding processes. As we discuss, if the FCC decides to proceed with further analysis, it should gather data to investigate the availability of such competitive alternatives going forwards.

43. Despite opponents' suggestion that intermodal providers' service offerings are not identical to special access services and should therefore not be considered as substitutes, as a general matter, products need not be perfect substitutes to provide competition that constrains pricing. For example, DSL and cable modem service are not perfect substitutes for each other and do not sell for identical prices. Nonetheless, this does not imply that these services are not economic substitutes and that the presence of one does not constrain the pricing of the other. Similarly, even though cable and wireless services are not identical to special access, the evidence indicates that both cable operators and wireless firms have become significant

64. See <http://www.wirelessweek.com/Archives/2007/08/FiberTower-Signs-Backhaul-Agreement-with-Sprint/> (accessed February 10, 2010).

65. AT&T Ex Parte, November 4, 2009, p. 6; Jeffrey McCracken and Don Clark, "Sprint, Partners to Pump \$1.5 Billion Into Clearwire," Wall Street Journal, November 8, 2009 (available at <http://online.wsj.com/article/SB10001424052748704402404574524152073150702.html>, accessed February 9, 2010); Marguerite Reardon, "Sprint Nextel and Clearwire Detail 4G Plans," May 7, 2008 (available at http://news.cnet.com/8301-10784_3-9938068-7.html, accessed February 18, 2010).

providers of services that compete with LECs' special access services since the FCC established its pricing flexibility rules.⁶⁶

44. Claims that services provided by cable and wireless firms are not substitutes for special access are also contradicted by the statements of cable and fixed wireless access companies which market their products as substitutes for special access. For example, cable companies now advertise a range of business services, including dedicated circuits, Ethernet circuits and business Internet services, all of which can substitute for AT&T special access services.⁶⁷ As discussed in our initial Declaration, a variety of firms, including cable and fixed wireless companies, have represented to their investors that their services are viable commercial alternatives to LEC services and that they continue to invest in offering those services.⁶⁸ For example:

- Comcast's business services revenue increased 48 percent in 2009 to \$828 million. Comcast "increased [its] capital investment in business services by over 51% to over \$350 million." Comcast expects "this momentum to continue as we begin to expand our services to medium-sized business and sell backhaul."⁶⁹

66. Carlton/Sider Declaration, ¶ 45.

67. See, for example, Cox's offerings of the following business services: business Internet, optical Internet, metro Ethernet and carrier access (<http://ww2.cox.com/business/santabarbara/data.cox>, accessed February 19, 2010); Comcast's offerings of: business class Internet, Ethernet dedicated network, and Ethernet private line (<http://www.comcast.com/Corporate/Learn/Business/business.html?lid=7LearnBusiness&pos=Nav>, accessed February 12, 2010); Cablevision's offerings of metro Ethernet and business Internet (<http://www.optimumbusiness.com/chooser.jsp>, accessed February 12, 2010); and Time Warner Cable's offerings of: business class Ethernet, metro Ethernet, and dedicated Internet access (<https://www.twcbc.com/NationalSales/Products/ProductDetails/high-speed-internet-access.ashx>, accessed February 12, 2010).

68. Carlton/Sider Declaration, ¶¶ 44-50.

69. Comcast Q4 2009 Earnings Call Transcript, February 3, 2010 (<http://seekingalpha.com/article/186373-comcast-q4-2009-earnings-call-transcript>, accessed February 19, 2010).

- Time Warner Cable “increased commercial capital spending [for 2009] about 60% year-over-year to \$352 million. We increased commercial line extension CapEx which includes the capital we spent this year to grow our cell tower back haul business.”⁷⁰
- Cox “estimates that Cox’s current cable franchise area represents a \$7 billion opportunity for wireline business services. The company also sees another \$4 billion in commercial wireless opportunities....”⁷¹
- Cablevision reports that it “provides fiber service to twice as many buildings in its metropolitan New York footprint than Verizon does.”⁷² Cablevision’s Optimum Lightpath division offers dedicated lines with 10 to 1,000 Mbps.⁷³ It also introduced a 40 gigabit optical transport service available over its entire footprint in February 2010.⁷⁴
- With respect to fixed wireless, FiberTower offers “carrier-grade connectivity over its nationwide licensed spectrum, ... solv[ing] the access bottleneck by delivering high capacity services to enterprises located in both on-net and off-net buildings. Services include wireless equivalents of NxT1, DS3, OC3 and Carrier

70. Time Warner Cable, Inc. Q4 2009 Earnings Call Transcript (<http://seekingalpha.com/article/185162-time-warner-cable-inc-q4-2009-earnings-call-transcript>, accessed February 19, 2010).

71. Carlton/Sider Declaration, ¶ 45, citing http://www.lightreading.com/document.asp?doc_id=185383&site=cdn.

72. Carlton/Sider Declaration, ¶ 45, citing US Telecom Report, p. 11.

73. http://www.optimumlightpath.com/ourservices_data.shtml, accessed February 17, 2010.

74. Optimum Lightpath press release, “Optimum Lightpath Introduces 40 Gigabit Optical Transport Services,” February 2, 2010.

Ethernet.”⁷⁵ FiberTower purchased an additional 4,000 miles of dark fiber to expand its network in January 2010.⁷⁶

45. AT&T’s own experience also indicates that fixed wireless and cable services are widely available and marketed to businesses. For example, AT&T uses microwave wireless service to provide access to its cell towers, and plans to make “substantial” use of that technology going forward, demonstrating that AT&T views wireless as an acceptable substitute for wireline special access.⁷⁷ Based on communications with AT&T marketing employees, we understand that a variety of AT&T’s special access customers have informed AT&T that they both receive bids and purchase services from providers such as Cox, Comcast and FiberTower. We also understand that AT&T itself purchases dedicated access services from all three of these alternative suppliers. The continued entry and investment discussed here are consistent with the reductions in special access prices discussed above.

46. Finally, opponents minimize the extent of competition from fiber-based competitive providers. We responded to such arguments in our initial Declaration, where we showed that many CLECs have deployed extensive fiber networks that provide competition for LECs’ special access services.⁷⁸ Indeed, a recent report by US Telecom notes that “there are at least 28 different competitors who have deployed fiber within the top 50 MSAs.... There is an average of six known fiber-based providers within each of these MSAs.”⁷⁹

75. Carlton/Sider Declaration, ¶ 46, citing <http://www.fibertower.com/corp/solutions-access.shtml>.

76. FiberTower press release, “FiberTower Expands Fiber Network Reach Through Transaction With FiberLight,” January 20, 2010.

77. AT&T Press Release, “AT&T to Make Faster 3G Technology Available in Six Major Cities This Year,” September 9, 2009.

78. Carlton/Sider Declaration, ¶ 48.

79. Carlton/Sider Declaration, ¶ 48, citing US Telecom Report, p. 24.

47. Recent data on investment by non-LECs in new infrastructure, particularly in high speed access infrastructure, is also inconsistent with opponents' claims that alternatives to LEC-provided special access services are not widely available. For example, according to a recent report by the Columbia Institute for Tele-Information ("CITI") commissioned by the FCC, telecommunications providers (both LECs and CLECs) spent \$15.5 billion on capital expenditures on broadband facilities in 2008; cable companies spent \$4.8 billion; and wireless companies spent \$10.4 billion. CITI forecast that firms will continue to spend similar amounts for the foreseeable future.⁸⁰

III. THERE IS NO BASIS TO ASSUME THAT PROPOSED ALTERNATIVE REGULATORY MECHANISMS ARE SUPERIOR TO THE FCC'S CURRENT FRAMEWORK

48. Opponents provide no evidence that their proposed alternative regulatory frameworks would be superior to the current regulatory framework. In particular, opponents provide no evidence that imposing stringent "interim" regulation prior to performing any analysis would be superior to the current regulatory regime. As we concluded in our initial Declaration, available data indicate that the FCC's approach, which is administratively relatively simple, is working reasonably well. Under these circumstances, the FCC could reasonably conclude that it is appropriate to terminate this proceeding and continue the present regulatory regime. If the FCC were to proceed with further data gathering and analysis, it should do so in an economically sound manner and evaluate all sources of competition.

A. The FCC could reasonably conclude that it is appropriate to terminate this proceeding and continue the present regulatory regime.

49. As discussed in our initial Declaration, the FCC needs to consider both potential costs and benefits in weighing whether or not to alter its approach to special access regulation.

80. CITI, p. 66.

In particular, the FCC must be mindful of asymmetric costs of “error” that may result from implementation of a new regulatory framework.

50. The history of rate-of-return regulation and, more recently, attempts to establish regulated prices for UNEs based on TELRIC show that it is very difficult for regulators to determine “the” competitive rate for telecommunications services. Rates that are “too high” can be self-correcting through attracting entry. However, rates that are set “too low” can undermine incentives of both ILECs and CLECs to invest in network facilities and deter incentives to innovate and, as a result, can result in significant long-term harm to consumer welfare.⁸¹ As mentioned above, FCC actions that deter investment in special access services threaten the infrastructure that supports wireless and Internet technologies services that are expected to experience rapid continued growth in coming years.⁸² The FCC has emphasized the importance of encouraging such investment as part of its ongoing broadband initiative.⁸³

51. Given the evidence that the current regulatory regime has worked reasonably well and the risk that regulators will err and harm consumer welfare by pursuing improper (even if well intentioned) regulation, it would be reasonable for the FCC to terminate this proceeding and continue the present regulatory regime. No regulatory regime will be perfect, and the existence of imperfections is not, in and of itself, justification for abandoning a regulatory regime. The question here is whether changes in the regulatory framework would be expected to produce sufficient benefits to justify the risks associated with any such change of the type proposed by opponents.

81. Carlton/Sider Declaration, ¶¶ 85-86.

82. Note 6, *infra*.

83. For example, the FCC has stated that one of its strategic goals is to “Encourage and facilitate an environment that stimulates investment and innovation in broadband technologies and services.” <http://www.fcc.gov/broadband/> (accessed February 3, 2010).

B. Opponents’ proposed approaches do not have a sound economic basis.

52. Opponents suggest that the FCC adopt a market power (or “dominance”) framework based on analysis of shares, margins and demand/supply elasticities, that generally follows the methodology for defining markets discussed in the Horizontal Merger Guidelines established by the U.S. Department of Justice and Federal Trade Commission.⁸⁴ This approach is often referred to as the “SSNIP” test, which stands for “small but significant and non-transitory increase in price.”⁸⁵ Opponents argue that pricing flexibility should not be granted in product and geographic markets in which a LEC is found to have market power using this framework.

53. Opponents’ proposal to follow the general market definition methodology outlined in the Merger Guidelines in this regulatory context is inappropriate as a matter of economics. The Merger Guidelines’ approach to market definition was developed to test whether a merger (or related transaction) would result in an *increase* in market power, and it is an economically sound methodology for doing so. However, the approach was not designed to measure the *existence* of market power pre-merger, which is the question asked by opponents.

54. As mentioned above, the SSNIP test asks whether, if two firms merge, they will be able to raise prices from their current levels. In order to answer that question, the Guidelines suggest looking at current and potential substitutes and whether they could constrain a price

84. See, for example, PAETEC Comments, pp. 29, 50-52; Mitchell Declaration, ¶¶ 31-37; TW Telecom Comments, pp. 6-7; NoChokePoints Comments, pp. 9-10.

85. See U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines, April 8, 1997, Section 1.11 (“Specifically, the Agency will begin with each product (narrowly defined) produced or sold by each merging firm and ask what would happen if a hypothetical monopolist of that product imposed at least a ‘small but significant and nontransitory’ increase in price, but the terms of sale of all other products remained constant. If, in response to the price increase, the reduction in sales of the product would be large enough that a hypothetical monopolist would not find it profitable to impose such an increase in price, then the Agency will add to the product group the product that is the next-best substitute for the merging firm’s product.”). (Internal citations omitted.)

increase. If one instead attempts to ask whether current prices are above the competitive level, it is necessary to specify what the “competitive” level is. Application of the SSNIP test based on current prices cannot answer this question. As Prof. Carlton has previously noted:

To answer the question of whether the firm has market power, some have tried to adapt the procedure of the *Merger Guidelines* to define a market in a Section 2 context. As a logical matter, this initially seems fine with the benchmark price now no longer being the current price but rather the competitive price. So the hypothetical monopolist test to define a market is as follows: consider all those products such that a hypothetical monopolist of those products would raise price above the competitive level by, say, 5 percent. One then calculates the market share of the firm in this market and if it is high one concludes that there is market power. But what sense does this make? Suppose the current price is \$10. If one knows that the competitive price is \$5, then the market definition exercise is useless! One can observe whether the current price (\$10) exceeds the competitive price (\$5) and the deviation is the measure of market power. There is no need to define a market and calculate market share in order to see whether the market share is so high that one can safely conclude that \$10 is higher than \$5. *Alternatively, if one does not know the competitive price, there is no way to implement this market definition test.*⁸⁶

C. Opponents’ proposed methodologies are result driven and would not yield reliable information.

55. If the FCC investigates whether an alternative set of pricing flexibility triggers is better correlated with the presence of competitive alternatives, the FCC should collect data on the available competitive alternatives and then analyze those data using sound methods of economic analysis.⁸⁷ Opponents, however, propose only limited data collection efforts which ignore certain kinds of competition, the importance of which is one of the questions this proceeding is intended to answer. That is, opponents fail to propose collecting any data that might disprove their hypotheses about the scope of competition for special access services. For example, opponents claim that cable and wireless carriers do not compete with LECs’ special

86. Dennis Carlton, “Market Definition: Use and Abuse,” Competition Policy International, Spring 2007, pp. 19-20. (Emphasis added. Internal citations omitted.)

87. Carlton/Sider Declaration, ¶¶ 60-63.

access services and thus propose that no data be collected on the presence or location of such facilities.⁸⁸ Similarly, opponents assert that some services (i.e., DS1s) can never be subject to competition and thus propose that no data be collected on DS1 services.⁸⁹ Again, based on the assumption that CLECs are not competitive threats in buildings they do not currently service, opponents claim that it is sufficient to collect data on buildings currently served by CLECs and not to collect data on the proximity of CLEC networks to other buildings.⁹⁰ Opponents also do not propose gathering information such as bidding data that could demonstrate the presence of such competition.

56. Although opponents acknowledge that some data should be collected relating to buildings currently served by CLEC competitors, their proposals ignore the role of CLECs as a competitive constraint for buildings that they are near but do not currently serve.⁹¹ As we explained in our initial Declaration, any such analysis should consider not only the locations currently lit by competitors, but also the locations to which competitors are willing to offer service by extending their networks.⁹² That is, CLECs typically bid for customers' special access business both at locations already connected to their networks and at locations that can be reached from their networks.⁹³ Accordingly, economically appropriate evaluation of competitive

88. TW Telecom Comments, pp. 15, 26-31; Sprint Comments, p. 20.

89. TW Telecom Comments, p. 25. TW Telecom also claims that DS_n Ethernet services are distinct from other DS_n services. This is a question that could be settled with data collected as part of this proceeding, but TW Telecom does not propose gathering such data. In any event, we understand that Ethernet services can be and are provided over DS_n copper loops. See AT&T Ex Parte, February 21, 2008, pp. 11-12.

90. PAETEC Comments, p. 55; Mitchell Declaration, ¶¶ 138-140.

91. PAETEC Comments, p. 55; Mitchell Declaration, ¶¶ 138-140.

92. Carlton/Sider Declaration, ¶ 5.

93. Carlton/Sider Declaration, ¶ 9.

conditions should account for networks that can economically serve a building even if they do not do so at present.

57. The FCC has previously recognized that fiber networks that are close to unlit buildings can be extended to serve these locations and provide competition. For example, the FCC found in the SBC/AT&T merger “that there are existing competitors with local fiber networks that reasonably could provide wholesale special access in MSAs where AT&T now operates local facilities.”⁹⁴ CLECs themselves have stated that they are a competitive factor at buildings that are close to their extensive fiber networks. For example, as mentioned above, TW Telecom has stated that it “has built an impressive national fiber footprint that can directly reach two-thirds of U.S. businesses.”⁹⁵

58. Contrary to opponents’ suggestions, data on cable and fixed wireless deployment should also be gathered if the FCC is interested in evaluating competitive alternatives available to customers. As discussed above, cable and fixed wireless firms claim that they do, in fact, provide substitutes for special access, and any analysis should test this claim rather than assume the contrary.

59. Claims that particular services such as DS1s can never be competitively supplied ignore the current existence of competitive offerings.⁹⁶ Furthermore, DS1 services may be supplied as part of a contract extending across multiple buildings and/or multiple services where

94. FCC, Memorandum Opinion and Order in the Matter of SBC Communications Inc. and AT&T Corp. Applications for Approval of Transfer of Control, FCC 05-183, November 17, 2005, ¶ 45 (“We conclude, therefore, that there are existing competitors with local fiber networks that reasonably could provide wholesale special access in MSAs where AT&T now operates local facilities.”).

95. TW Telecom and Cisco press release, “TW Telecom Drives Nationwide Ethernet Deployments, Utilizes Cisco IP NGN Carrier Ethernet Design,” February 9, 2009.

96. For example, TW Telecom advertises DS1 services and FiberTower offers wireless DS1 services. TW Telecom, “Dedicated High Capacity Services”; FiberTower, “Backhaul Strategies for Mobile Operators,” September 22, 2009, pp. 2, 6.

the revenues from the contract as a whole justify extending DS1 service to a particular building. Firms may also sell multiple DS1s to a particular building, such as when there are multiple customers in a building. Thus, there is no basis for categorically excluding DS1 services from data collection efforts.

60. As discussed in our initial Declaration, the FCC’s existing regulatory framework, consistent with sound economics, recognizes that the presence of competitors with sunk investments can play an important role in constraining LEC pricing and discouraging predatory or exclusionary action. By contrast, opponents’ proposals do not acknowledge that fact and often propose triggers based on the share of buildings in which CLECs currently have customers.⁹⁷ In particular, opponents suggest that the FCC attempt to identify some critical number of competitors with lit facilities in a building as a trigger for granting pricing flexibility. For example, PAETEC argues that there must be four competitors with lit facilities in a building before pricing flexibility should be granted, while TW Telecom suggests that two suppliers to a building is sufficient.⁹⁸ Alternatively, PAETEC suggests that the FCC implement pricing flexibility triggers based on HHI calculations.⁹⁹

61. Opponents present no analysis justifying the proposed critical numbers. For example, they present no analysis that justifies ignoring the proximity of CLECs that do not currently serve a given building and the availability of intermodal competition. As discussed, these competitors are “actual” competitors. There also is no basis to conclude that HHI-based triggers are appropriate in this context. Indeed, the Department of Justice has noted that even the

97. Mitchell Declaration, ¶ 82; Sprint Comments, p. 17; NoChokePoints Comments, pp. 11-12; TW Telecom Comments, p. 15; PAETEC Comments, pp. 18-20.

98. PAETEC Comments, pp. 50-52; TW Telecom Comments, pp. 26-31.

99. PAETEC Comments, pp. 19, 50-53.

HHI-based triggers specified in the Merger Guidelines are not a reliable guide to actual merger enforcement. As the Department of Justice and Federal Trade Commission have noted in their 2006 Commentary on the Horizontal Merger Guidelines, “the Agencies have often not challenged mergers involving market shares and concentration that fall outside the zones set forth in Guidelines” because “market shares and concentration are but a ‘starting point’ for the analysis, and ... many mergers falling outside these three zones nevertheless, upon full consideration of the factual and economic evidence, are found unlikely substantially to lessen competition.”¹⁰⁰ In practice, HHI-based analysis of the type proposed by PAETEC is intended to serve only to determine when further investigation is warranted – and such investigation often determines that there are no competitive concerns.

D. In contrast to the FCC’s current rules, proposed approaches to identifying where LECs should be allowed to have pricing flexibility would be administratively burdensome.

62. Some opponents propose analyzing market definition and market power initially on a building by building basis, or even individual floors within a building.¹⁰¹ Analysis of this form would be administratively burdensome.

63. The FCC declined to perform a building by building analysis during the UNE proceedings, noting that it would involve examining at least “700,000 commercial buildings, and perhaps as many as 3 million buildings.”¹⁰² Also, the FCC noted that “[s]uch case-by-case

100. U.S. Department of Justice and Federal Trade Commission, Commentary on the Horizontal Merger Guidelines, March 2006, p. 15.

101. PAETEC Comments, pp. 32, 34-35; NoChokePoints Comments, p. 7.

102. FCC, Order on Remand in the Matter of Unbundled Access to Network Elements and Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, FCC 04-290, February 4, 2005 (“Order on Remand”), ¶ 157.

evaluation would be impracticable even if the relevant evidence were entirely objective and readily forthcoming.”¹⁰³

64. PAETEC recognizes that the FCC has declined to perform such analyses in the past, but suggests that it would be less burdensome if the FCC only were to analyze areas where LECs request pricing flexibility.¹⁰⁴ However, pricing flexibility is now widespread and LECs would therefore be expected to request pricing flexibility on a widespread basis. Thus, PAETEC’s proposed simplification would not greatly reduce the administrative burden.

65. Experience in other proceedings also suggests that creation of a list of buildings with certain competitive characteristics can have inaccuracies that are burdensome to resolve. For example, in the SBC/AT&T merger, the Department of Justice gathered data, in part, from LECs, competitive suppliers of special access services and possibly other sources, and provided to the merging parties a list of buildings that it asserted lacked competition from alternative access suppliers.¹⁰⁵ This list substantially understated the extent to which competitors served those buildings or had nearby networks. After the commitment of substantial resources, including our own firm’s involvement in physical inspection of buildings and nearby locations, AT&T/SBC demonstrated to the Department of Justice’s satisfaction that many of those buildings were, in fact, subject to competition.¹⁰⁶

66. Sprint and Dr. Mitchell recognize the administrative difficulty of their proposed analysis and suggest looking at only a limited group of cities or areas – “sampling” – to reduce

103. Order on Remand, ¶ 157.

104. PAETEC Comments, p. 34.

105. Carlton and Sider filed testimony on behalf of AT&T.

106. All three of the authors were involved with these efforts.

the burden on the FCC.¹⁰⁷ We have already discussed the difficulties of this type of benchmark approach. Dr. Mitchell's proposed methodology is not clearly specified, but it appears that the building-based approach advocated by Dr. Mitchell would not answer the questions he proposes. For example, as we discuss below, his approach ignores important types of competition. Omitting such a variable from his analysis is likely to become increasingly problematic in coming years as intermodal competition and competition from intramodal competitors standing ready to serve buildings continues to expand. More generally, a detailed analysis of all competitive alternatives on such a granular level will be a complicated and time-consuming venture regardless of the number of areas examined. To the extent that Dr. Mitchell intends to use a granular version of market share or competition and compare it to a measure of price, he will need to gather data on prices, the collection of which will entail additional administrative burdens and difficulties for the reasons we discussed earlier.

67. Higher levels of aggregation can reduce the administrative burden of an analysis, and some opponents have suggested analyses at a wire center level.¹⁰⁸ However, opponents do not provide any persuasive economic arguments as to why a wire center is a more economically appropriate unit of analysis than an MSA, particularly since competitive networks are not organized on a wire center basis. That is, opponents do not claim that a wire center is itself an economic market, and they do not provide any persuasive arguments to justify the increased difficulty of performing analyses at the wire center level relative to the MSA level.

68. Furthermore, a pricing flexibility regime needs to account for changes in competitive conditions – that is, as competition increases, additional areas should be able to

107. Mitchell Declaration, ¶¶ 84-87.

108. PAETEC Comments, p. 35; Mitchell Declaration, ¶¶ 81-90; TW Telecom Comments, p. 28.

obtain pricing flexibility. Since LECs would not be able to determine when a trigger threshold has been passed under opponents' proposed screens, the FCC would have to require regular updating of data that would be the basis of opponents' proposed granular screens, adding to the expense and administrative difficulty. By contrast, data for the current regime are relatively simple to gather, analyze and update.

69. A building by building or floor by floor analysis would also be inconsistent with observed pricing patterns. We are not aware of any carrier that prices on a building specific basis. Rather, basic special access tariffs are generally set on a regionwide basis with discounts negotiated typically across broad geographic areas, reflecting the overall level of competition in the area. This fact indicates that existing carriers and customers also recognize the administrative difficulty of working on a building by building basis and supports the FCC's decision to work at a more aggregate level. Establishing price flexibility triggers on a more granular basis than the MSA, such as on a building or wire center level, would impose administrative burdens on the FCC as well as on the LECs and their customers. That is, contracts between LECs and their customers would have to specify prices on a more granular level than they currently do, increasing the administrative costs for both groups.

IV. PROPOSED REVISIONS TO THE X-FACTOR ARE WITHOUT ECONOMIC BASIS.

70. We noted in our initial Declaration that retrospective changes in price caps or X-factors based on past performance undermine the economic rationale for price cap regulation.¹⁰⁹ Opponents appear to agree that any revisions to X-factors should only be applied on a going forward basis.¹¹⁰

71. Some opponents, however, have proposed “sharing” mechanisms where LECs would return some portion of their profits above and beyond the X-factor (i.e., retrospective sharing). For example, PAETEC argues that the “Commission should re-impose a sharing requirement and earnings sharing zones.”¹¹¹ PAETEC refers specifically to re-imposing the sharing mechanisms which the FCC abandoned after a short transition period from rate of return regulation. The FCC correctly recognized in its Special Access NPRM that such mechanisms represent a return to rate-of-return regulation and undermine the positive incentives of price cap regulation.¹¹²

72. Opponents have also suggested that the FCC immediately adopt an X-factor of 5.3 percent, which was the X-factor adopted in the first LEC Performance Review Order in 1995.¹¹³ Opponents provide no evidence to support their assumption that 5.3 percent is a better

109. Carlton / Sider Declaration, ¶¶ 65-72.

110. See, for example, Sprint Comments, p. 46.

111. PAETEC Comments, p. 77.

112. FCC, Order and Notice of Proposed Rulemaking in the Matter of Special Access Rates for Price Cap Local Exchange Carriers and AT&T Corp. Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services, FCC 05-18, January 31, 2005 (“Special Access NPRM”), ¶ 43 (“In the *1997 Price Cap Review Order*, the Commission eliminated the sharing requirements, finding that sharing severely blunts the incentives of price cap regulation by reducing the rewards for LEC efficiency gains. The Commission also found that eliminating sharing requirements removed the last vestige of rate of return regulation that had created incentives to shift costs between services to evade sharing in the interstate jurisdiction.”) (Internal footnotes omitted.)

113. Sprint Comments, p. 46; PAETEC Comments, p. x.

measure of productivity growth than is the current X-factor (which is based on inflation).

Furthermore, the FCC has stated that there is no presumption that older rates remain “just and reasonable” and that it should therefore not “rollback” to previous rates.¹¹⁴

73. In 1995, the FCC offered LECs a choice of X-factors, with 5.3 percent being the highest offered.¹¹⁵ The FCC noted that “this X-factor represents a major challenge over the short period of time that this interim plan will be in effect.”¹¹⁶ Even if the 5.3 percent X-factor was appropriate in 1995, opponents present no evidence that it would remain so today. There have been many changes in the industry over the past fifteen years, some of which would suggest a lower X-factor. For example, if the FCC expected LECs to realize short run productivity gains in the transition from rate of return regulation in setting the 5.3 percent X-factor, now 15 years later it is likely that any such short term gains would be exhausted, suggesting a lower X-factor going forward would be appropriate.¹¹⁷ Other changes that could affect the setting of an economically appropriate X-factor include changes in input prices such as the cost of copper and labor, the introduction of new lines of service by the LECs that may use common facilities with special access, as well as the decline of existing businesses such as local (landline) telephone services. There is no reason, based on the available evidence, to believe that the 5.3 percent X-factor adopted in 1995 is a better approximation of expected forward looking productivity gains

114. See, e.g., AT&T Ex Parte, January 15, 2008, note 16, citing 85 FCC2d 549.

115. LECs using lower X-factors incurred revenue sharing obligations. See, for example, FCC, First Report and Order in the Matter of Price Cap Performance Review for Local Exchange Carriers, FCC 95-132, April 7, 1995, (“Price Cap Order”), ¶¶ 199, 220.

116. Price Cap Order, ¶ 220.

117. See, for example, Phil Burns and Tom Weyman-Jones, “The long-run level of X in RPI-X regulation: Bernstein and Sappington revisited,” Working Paper, July 10, 2008.

today than the current X-factor, or that changing the X-factor from the status quo would improve matters in any way.

74. Considerations of the asymmetry in the potential harm from setting regulated prices “too high” or “too low also pertain to the choice of the X-factor. As discussed in Section III.A above, the costs of setting prices “too low” (deterring investment by LECs and rivals) are likely to be greater than setting them “too high,” since prices that are “too high” will attract entry that can help reduce prices. Indeed, a sufficiently aggressive X-factor can threaten the financial viability of a regulated firm.¹¹⁸ Moreover, determining an economically appropriate X-factor is a complex undertaking.¹¹⁹ Given such uncertainty, the asymmetric costs of error, and the evidence that the FCC’s current regulatory regime is working reasonably well, the FCC should exercise caution when examining proposals to change the X-factor.

V. OPPONENTS FAIL TO IDENTIFY ANY COMPETITIVE HARM FROM THE TERMS AND CONDITIONS OFFERED BY LECS

75. LECs currently offer a variety of discounts based on volume, contract duration and a aggregate purchase commitment.¹²⁰ Opponents claim that the FCC should prohibit many of these discounts.¹²¹ As we discussed in our initial Declaration, such discounts are commonplace and can benefit consumers and enhance economic efficiency in a variety of

118. See, for example, Jeffrey Bernstein and David Sappington, “How to determine the X in RPI-X regulation: a user’s guide,” *Telecommunications Policy* 24 (2000), pp. 63-64 (“If too large an X factor is imposed, the financial integrity of the regulated firm can be threatened.”).

119. See, for example, Jeffrey Bernstein and David Sappington, “Setting the X Factor in Price-Cap Regulation Plans,” *Journal of Regulatory Economics* 16 (1999), p.7 (“The ideal X factor is typically difficult to estimate precisely. Disparate assessments of the ideal X factor often arise in practice, and regulators are forced to exercise discretion when setting X factors (Beesley and Littlechild 1989).”).

120. Carlton/Sider Declaration, ¶¶ 87-99.

121. Mitchell Declaration, ¶¶ 114-134; NoChokePoints Comments, pp. 27-32; PAETEC Comments, pp. 80-84.

ways.¹²² Furthermore, there are only limited circumstances in which such discounts may harm competition, and opponents do not show that such circumstances apply here.¹²³

76. A blanket prohibition on such discounts is thus likely to harm consumers. A more efficient approach is to encourage discounting and to investigate any specific allegations of exclusion or predation that opponents claim have lead to elevated pricing. Although there is generally no basis for questioning discounting practices absent a showing of the rare case in which exclusion or predation is successful in leading to higher prices, we now look in some detail at the claimed “abusive” terms.

77. Opponents present concerns primarily about six types of terms and conditions: 1) revenue commitment levels; 2) shortfall penalties; 3) termination liabilities; 4) overage penalties; 5) circuit migration charges; and 6) win back discounts.¹²⁴ While opponents claim that discounts of these types deter entry of rivals that provide special access services, they fail to identify any competitive harm from these terms and conditions. To the contrary, available evidence indicates that there has been widespread entry and that LECs’ rivals have continued to invest in new facilities.¹²⁵

78. With respect to revenue commitments levels, opponents present no support for their claim that such commitments “lock up” sufficient demand that entry is deterred or that there has been any elevated pricing as a result. Our analysis of the impact of BellSouth’s contract

122. Carlton/Sider Declaration, ¶ 89.

123. Carlton/Sider Declaration, ¶¶ 95-98.

124. Mitchell Declaration, ¶ 125; PAETEC Comments, pp. 82-84; NoChokePoints Comments, pp. 28-30; Level 3 Comments, pp. 24-26.

125. Carlton/Sider Declaration, ¶¶ 44-50; Declaration of Dennis W. Carlton and Hal S. Sider on behalf of Bellsouth Telecommunications, Inc., in the matter of AT&T Corp., Complainant v. Bellsouth Telecommunications, Inc., Defendant, File No. EB-04-MD-010, July 20, 2004 (“Carlton/Sider BellSouth Declaration”), ¶¶ 34-42.

terms in a related FCC proceeding in 2004 demonstrated that there was substantial uncommitted demand for special access services available to be served by CLECs and other rivals.¹²⁶ In addition, competitors face no restrictions in competing for the substantial volumes coming off of contracts each year. As we discussed in our July 20, 2004 Declaration, the volume commitments in AT&T's (then BellSouth's) tariffs are also not specific to any given route, so customers can devote uncommitted demand to circuits where competitive supply is available.¹²⁷

79. Revenue and volume commitments, in the absence of demonstrable and significant consumer harm, generally benefit competition, not harm it. The D.C. Circuit Court, for example, when examining these terms and conditions, reversed an FCC ruling which concluded that such discounts were not sufficiently cost-based. The Court noted that the discount plans are “most naturally viewed as a bargain containing terms that both benefit and burden its subscribers.”¹²⁸

80. Long term contracts and volume commitments can encourage the parties to make the appropriate level of investments in capacity, encourage efficient order size and encourage innovation.¹²⁹ Given a contract committing a purchaser to particular volumes, the presence of contractual incentives for parties to meet their obligations under a contract (i.e., shortfall penalties and termination liabilities) is commonly observed and unremarkable. Indeed, if breaking a contract had no consequences, there would be no reason to sign the contract in the

126. Carlton/Sider BellSouth Declaration, ¶¶ 43-66.

127. Carlton/Sider BellSouth Declaration, ¶ 64.

128. BellSouth Telecommunications, Inc. v. FCC, 469 F3d 1052 (D.C. Circuit 2006), p. 1060.

129. Carlton/Sider BellSouth Declaration, ¶ 30.

first place and the benefits of the arrangement would be lost. Shortfall penalties and termination liabilities can serve an important economic role, as can most contract terms.

81. With respect to “overage penalties,” we understand that these terms are not, in fact, penalties at all. Sprint notes that “if a customer’s DS 1 channel terminations exceed 150 percent of the commitment level (under the 5-year term plan), Ameritech charges the non-discounted month-to-month rate on all channel terminations above the commitment level (not, for example, on demand above the 150 percent maximum allowable level).”¹³⁰ That is, customers will always receive the discount on their committed level, and, as long as the customer does not exceed 150 percent of the committed level, the customer will obtain discounts on the additional circuits as well. Sprint appears to argue that the discount should always be applied to volumes above the committed level as well. Here, opponents, in effect, are complaining that they are not able to obtain term and volume discounts without actually committing to particular terms and volumes. This would render the quid pro quo of a term and volume discount program largely meaningless.

82. With respect to circuit migration charges, opponents present no evidence that such charges have resulted in exclusion or predation.¹³¹ Opponents do not dispute that LECs incur costs for such services or that LECs should be allowed to charge for such services – opponents only claim that the level of such fees is “too high.”¹³² If customers feel that the rates are not “just and reasonable,” there are regulatory procedures in place at the FCC to handle such complaints.

130. Sprint Comments, note 131. (Emphasis in original.)

131. We also understand that AT&T disputes whether such charges are present in its tariffs.

132. Sprint Comments, p. 41.

83. Finally, win back discounts generally benefit consumers by offering lower prices. In particular, the fact that a competitor is already serving a customer indicates that it has incurred sunk costs and so will continue to be a competitive influence regardless of whether AT&T offers lower prices to customers or not. Opponents have not provided any evidence that “win back” prices are below cost or that the offers have any other characteristics that would permit exclusion or predation. Indeed, the presence of sunk costs makes predation or exclusion unlikely, so that consumers should be allowed to benefit from the lower prices produced by competition.

VERIFICATION PAGE

I declare under penalty of perjury that, based on the information available to me, the foregoing is true and correct to the best of my knowledge.

/s/ Dennis W. Carlton

/s/ Allan L. Shampine

/s/ Hal S. Sider

Dated: February 24, 2010

Exhibit 1

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Ph.D., MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Massachusetts: Economics, 1975.

M.S., MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Massachusetts: Operations Research, 1974.

A.B., HARVARD UNIVERSITY (Summa cum laude): Applied Math and Economics, 1972.

EMPLOYMENT

COMPASS LEXECON (formerly Lexecon), Chicago, Illinois (2008 – present) Senior Managing Director; LEXECON INC., (1977 – 2006), President 1997 – 2001, Senior Managing Director 2003 - 2006

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U.S. DEPARTMENT OF JUSTICE, Washington, District of Columbia (2006 – 2008) Deputy Assistant Attorney General for Economic Analysis, Antitrust Division

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Massachusetts, Department of Economics (1975 – 1976) Instructor in Economics

OTHER PROFESSIONAL EXPERIENCE

HARVARD UNIVERSITY, Public Policy Summer Course in Economics (1977), Professor

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FIELDS OF SPECIALIZATION

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ACADEMIC HONORS AND FELLOWSHIPS

Keynote Speaker, Japanese Symposium on Competition, sponsored by Japan Fair Trade Commission, 2009
Recipient of Inaugural Robert F. Lanzilotti Prize, awarded by the International Industrial Organization Society for Best Paper in Antitrust Economics, 2008
Keynote Address to Israel Antitrust Conference, 2008
Lewis Bernstein Memorial Antitrust Lecture, Washington, D.C., 2006
Distinguished Visitor, University of Melbourne, April 2005
Milton Handler Lecture, New York, 2004
Keynote Address to the International Competition Network, Mexico, 2004
Alexander Brody Distinguished Lecture, Yeshiva University, 2000
Ph.D. Thesis chosen to appear in the Garland Series of Outstanding Dissertations in Economics
Recipient of the 1977 P.W.S. Andrews Memorial Prize Essay, best essay in the field of Industrial Organization by a scholar under the age of thirty
National Science Foundation Grant, 1977 - 1985
Recipient of Post-doctoral Grant from the Lincoln Foundation, 1975
National Science Foundation Fellowship, 1972 - 1975
Phi Beta Kappa, 1971
John Harvard Award, 1970
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PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Co-editor, Journal of Law and Economics, 1980 - present
Visiting Committee, MIT, Department of Economics, 1995 - present
Member, Advisory Board, Economics Research Network, 1996 - present
Member, Advisory Board of Antitrust and Regulation Abstracts, Social Science Research Network, 1998 - present
Advisory Board, Massachusetts Institute of Technology, Department of Economics, 1999 - present
Co-Editor, Competition Policy International (CPI), 2004 – present
Advisory Board, Journal of Competition Law and Economics 2004- present
Deputy Assistant Attorney General for Economic Analysis, Antitrust Division, U.S. Department of Justice, 2006 - 2008
Presidential Appointment to the Antitrust Modernization Commission, March 17, 2004 - 2007
Invited Panelist at Public Hearing on the Retail Banking Sector Inquiry: Payment Cards, before the European Commission in Brussels, Belgium, July 17, 2006.
Consultant on Merger Guidelines to the FTC, 2003
Professor, George Mason Institute for Judges, October 2001
Chairman, FTC Round Table on Empirical Industrial Organization (September 11, 2001)
Participant in the Round Table on the Economics of Mergers Between Large ILECS before the Federal Communications Commission, February 5, 1999
Member, Steering Committee, Social Science Research Council, Program in Applied Economics, 1997 - 1999

Participant in roundtable discussions on "The Role of Classical Market Power in Joint Venture Analysis," before the Federal Trade Commission, November 19, 1997 and March 17, 1998.
Participant in meetings with Committee of the Federal Reserve on Payment Systems, June 5, 1997
Associate Editor, *Regional Science and Urban Economics*, 1987 - 1997
Resident Scholar, Board of Governors of the Federal Reserve System, Summer, 1995
Accreditation Committee, Graduate School of Business, Stanford University, 1995
Associate Editor, *The International Journal of Industrial Organization*, 1991 - 1995
Editorial Board, *Intellectual Property Fraud Reporter*, 1990 - 1995
Consultant on Merger Guidelines to the U.S. Department of Justice, 1991 - 1992
Member, Advisory Committee to the Bureau of the Census, 1987 - 1990
National Bureau of Economic Research, Research Associate
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BOOKS

Market Behavior Under Uncertainty, Ph.D. Thesis, Massachusetts Institute of Technology (September 1975); Garland Publishing (1984).

Modern Industrial Organization, Scott, Foresman & Co., co-authored with Jeffrey Perloff, first edition (1990), (Chapter 17 of first edition reprinted as "The Economics of Information" for the University of Connecticut, Food Marketing Policy Center (1989)), second edition (1994), translated into Chinese, French, Hungarian and Italian; Addison Wesley Longman, third edition (2000), fourth edition (2005), translated into Chinese (2009).

RESEARCH PAPERS

"The Equilibrium Analysis of Alternative Housing Allowance Payments," (with Joseph Ferreira) Chapter 6 of Analysis of a Direct Housing Allowance Program, The Joint Center for Urban Studies of M.I.T. and Harvard University, (July 1975).

"Theories of Vertical Integration," presented at Fourth Annual Telecommunications Conference. Appears in a volume of Proceedings of the Fourth Annual Telecommunications Conference, Office of Telecommunications Policy, (April 1976).

"Uncertainty, Production Lags, and Pricing," American Economic Review, (February 1977).

"Selecting Subsidy Strategies for Housing Allowance Programs," (with Joseph Ferreira) Journal of Urban Economics, (July 1977).

"Peak Load Pricing With Stochastic Demand," American Economic Review, (December 1977). (Reprinted in Economic Regulation edited by P.L. Joskow, Edward Elgar Publishing Limited, 1998 and Reprinted in The Economics of Public Utilities edited by Ray Rees, Professor of Economics at the University of Munich, Germany, 2005.)

"The Distribution of Permanent Income," Income Distribution and Economic Inequality, edited by Zvi Griliches, et al. (Halsted Press, 1978).

"Vertical Integration--An Overview," in Congressional Record Hearings on the Communications Act of 1978. Bill H.R. 13105, (August 3, 1978).

- "Market Behavior with Demand Uncertainty and Price Inflexibility," American Economic Review, (September 1978).
- "Vertical Integration in Competitive Markets Under Uncertainty," Journal of Industrial Economics, (March 1979). Awarded the P.W.S. Memorial Prize for the best essay in the field of Industrial Organization by a scholar under the age of thirty.
- "Valuing Market Benefits and Costs in Related Output and Input Markets," American Economic Review, (September 1979).
- "Contracts, Price Rigidity and Market Equilibrium," Journal of Political Economy, (October 1979).
- "Why New Firms Locate Where They Do: An Econometric Model," in Studies in Regional Economics, edited by W. Wheaton, (Urban Institute, 1980).
- "Benefits and Costs of Airline Mergers: A Case Study," (with W. Landes and R. Posner) Bell Journal of Economics, (Spring 1980). (Reprinted in "Air Transport" in Classics In Transport Analysis series, edited by Kenneth Button and Peter Nijkamp, 2001.)
- "The Limitations of Pigouvian Taxes as a Long Run Remedy for Externalities," (with G. Loury) Quarterly Journal of Economics, (November 1980).
- "The Law and Economics of Rights in Valuable Information: A Comment," Journal of Legal Studies, (December 1980).
- "Price Discrimination: Vertical Integration and Divestiture in Natural Resources Markets," (with J. Perloff) Resources and Energy, (March 1981).
- "The Spatial Effects of a Tax on Housing and Land," Regional Science and Urban Economics, (November 1981).
- "Comments on Weicher," Journal of Law and Economics, (December 1981).
- Comment, in Sherwin Rosen ed. Studies in Labor Markets, University of Chicago Press, (1981).
- "Planning and Market Structure," in The Economics of Information and Uncertainty, edited by J.J. McCall, University of Chicago Press, (1982).
- "The Disruptive Effect of Inflation on the Organization of Markets," in Robert Hall, ed. The Economics of Inflation, University of Chicago Press, (1982).
- "The Need for Coordination Among Firms With Special Reference to Network Industries," (with J. M. Klammer) University of Chicago Law Review, (Spring 1983).
- "A Reexamination of Delivered Pricing," Journal of Law and Economics, (April 1983).
- "Futures Trading, Market Interrelationships, and Industry Structure," American Journal of Agricultural Economics, (May 1983).
- "The Regulation of Insider Trading," (with D. Fischel), Stanford Law Review, (May 1983), reprinted in J. Macey ed., Classics in Corporate Law and Economics, Edward Elgar Publishing (2008), reprinted in part in Roberto Romano, Foundations of Corporate Law, Oxford University Press (1993) and Foundation Press (2010 forthcoming).

- "The Location and Employment Choices of New Firms: An Econometric Model with Discrete and Continuous Endogenous Variables," The Review of Economics and Statistics, (August 1983).
- "Economic Goals and Remedies of the AT&T Modified Final Judgment," (with W. Lavey), Georgetown Law Review, (August 1983).
- "Equilibrium Fluctuations When Price and Delivery Lags Clear the Market," Bell Journal of Economics, (Autumn 1983).
- "Energy and Location," Energy Costs, Urban Development, and Housing, Brookings Institution, (1984).
- "Futures Markets: Their Purpose, Their History, Their Growth, Their Successes and Failures," Journal of Futures Markets, (September 1984). (Reprinted in Futures Markets edited by A.G. Malliaris and W.F. Mullady, Edward Elgar Publishing Limited, 1995; and in Classic Futures: Lessons from the Past for the Electronics Age, edited by Lester Telser, Risk Books, 2000.)
- "The Economics of Gray-Market Imports," (with C. DeMuth), written for the Coalition to Preserve the Integrity of American Trademarks (COPIAT), (May 1985).
- "The Limitation of Pigouvian Taxes As A Long Run Remedy for Externalities: Extension of Results," (with G. Loury) Quarterly Journal of Economics, (August 1986).
- "The Rigidity of Prices," American Economic Review, (September 1986).
- "The Theory and The Facts of How Markets Clear: Is Industrial Organization Valuable for Understanding Macroeconomics?" in Handbook of Industrial Organization, eds. Schmalensee and Willig, (1989).
- "Market Power and Mergers in Durable Good Industries," (with R. Gertner), Journal of Law and Economics, (October 1989).
- "Comments on Vertical Integration and Market Foreclosure," Brookings Papers on Economic Activity: Microeconomics, (1990).
- Book Review of Tirole's "The Theory of Industrial Organization", Journal of Political Economy, (June 1990).
- "The Genesis of Inflation and the Costs of Disinflation: Comment," Journal of Money, Credit & Banking, (August 1991, Part 2).
- "The Theory of Allocation and its Implications for Marketing and Industrial Structure: Why Rationing is Efficient," Journal of Law and Economics, (October 1991).
- "The Economics of Cooperation and Competition in Electronic Services Network Industries," in Economics of Electronic Service Networks, Wildman Steven ed., Praeger Press, (1992).
- "Merger Policy and Market Definition Under the EC Merger Regulation," (with W. D. Bishop). Conference on Antitrust in a Global Economy, Fordham Corporate Law Institute, (1994).
- "The Antitrust Economics of Credit Card Networks," (with A. Frankel) Antitrust Law Journal, (Winter 1995).

- "Economic Organization and Conflict," Journal of Institutional and Theoretical Economics, (March 1995).
- "Antitrust and Higher Education: Was There a Conspiracy to Restrict Financial Aid?" (with G. Bamberger and R. Epstein) The Rand Journal of Economics, (Vol. 26, No. 1, Spring 1995, pp. 131-147).
- "The Competitive Effects of Line-of-business Restrictions in Telecommunications," (with K. Arrow and H. Sider), Managerial and Decision Economics, (Vol. 16, pp. 301-321, 1995). (Reprinted in Deregulating Telecommunications - The Baby Bells Case for Competition, edited by Richard S. Higgins and Paul H. Rubin, John Wiley & Sons Ltd., 1995.)
- "The Antitrust Economics of Credit Card Networks: Reply to Evans and Schmalensee," (with A. Frankel), Antitrust Law Journal, (Spring 1995).
- "Antitrust and Payment Technologies," (with A. Frankel), Review, Federal Reserve Bank of St. Louis (November/December 1995).
- "Antitrust Policy Toward Mergers When Firms Innovate: Should Antitrust Recognize the Doctrine of Innovation Markets?" Testimony before the Federal Trade Commission Hearings on Global and Innovation-based Competition (October, 1995).
- "You Keep on Knocking But You Can't Come In: Evaluating Restrictions on Access to Input Joint Ventures," (with S. Salop), Harvard Journal of Law & Technology, (Volume 9, Summer, 1996). (Reprinted in e-Commerce Antitrust & Trade Practices, Practising Law Institute, 2001.)
- "Comments on Causes and Consequences of Airline Fare Wars," Brookings Papers on Economic Activity: Microeconomics, (1996).
- "A Critical Assessment of the Role of Imperfect Competition in Macroeconomics," in Market Behavior and Macro Economic Modeling, Brakman, Van Ees, & Kuipers (eds.), MacMillan Press (1997).
- "Price Rigidity," Business Cycles and Depressions, David Glasner ed., Garland Publishing, Inc., (1997).
- "Communication Among Competitors: Game Theory and Antitrust," (with R. Gertner and A. Rosenfield), George Mason Law Review, (1997). (Reprinted in e-Commerce Antitrust & Trade Practices, Practising Law Institute, 2001.)
- "Comments on Born and Viscusi," Brookings Papers on Economic Activity: Microeconomics, (1998).
- "Antitrust and Higher Education: MIT Financial Aid (1993)," (with G. Bamberger), The Antitrust Revolution, in eds. J. Kwoka and L. White, (Oxford University Press, 3rd edition 1999).
- "Market Power and Vertical Restraints in Retailing: An Analysis of FTC v. Toys 'R' Us," (with H. Sider), The Role of the Academic Economist in Litigation Support, edited by Daniel Slottje, North Holland, (1999).
- "The Economics of Religion, Jewish Survival and Jewish Attitudes Toward Competition on Torah Education," (with A. Weiss), Journal of Legal Studies, (2001). (Reprinted in Essential Readings on Jewish Identities, Lifestyles and Beliefs, edited by Stanford M. Lyman, Gordian Knot Books, 2003).

"A General Analysis of Exclusionary Conduct and Refusal to Deal -- Why Aspen and Kodak are Misguided," Antitrust Law Journal, (2001). (Reprinted in e-Commerce Antitrust & Trade Practices, Practising Law Institute, 2001.)

"The Lessons from Microsoft," Business Economics, (January 2001).

"Lessons from Halacha About Competition and Teaching," (with A. Weiss), Center for Business Ethics Social Responsibility, <http://besr.org/library/competition.html>, (March 2001).

"The Choice of Organizational Form in Gasoline Retailing and The Costs of Laws Limiting that Choice," (with A. Blass), Journal of Law and Economics, (October 2001). Reprinted in Franchise Contracting and Organization, edited by Francine Lafontaine, Elgar Publishing, (2005).

"Should The Merger Guidelines Be Scrapped? Introduction to a Debate," in Symposium On The Antitrust Analysis Of Mergers: Merger Guidelines vs. Five Forces, 33 U. WEST L.A. L. REV. (2001).

"Free Riding and Sales Strategies for the Internet," (with J. Chevalier), The Journal of Industrial Economics, (December 2001).

"The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries," (with M. Waldman), The Rand Journal (Vol. 33, No. 2, Summer 2002). (Reprinted in B. Klein and A. Lerner eds. Economics of Antitrust Law, Edward Elgar Publishing Ltd, 2008, and Recent Developments in Monopoly and Competition Policy, The International Library of Critical Writings in Economics, edited by George Norman, Edward Elgar Publishing Ltd, 2008.)

"The Competitive Effects of Fannie Mae," (with D. Gross and R. Stillman) in Housing Matters: Issues in American Housing Policy, Fannie Mae (January 2002, reprinted 2004).

"Intellectual Property, Antitrust and Strategic Behavior," (with R. Gertner), in eds. Adam Jaffee and Joshua Lerner, Innovation Policy and the Economy, Volume 3, MIT Press (2003).

"Airline Networks and Fares," (with G. Bamberger), Handbook of Airline Economics, 2nd ed., Darryl Jenkins, ed., McGraw Hill (2003).

"Contracts that Lessen Competition -- What is Section 27 for, and How Has it Been Used?" (with David Goddard), in Mark N. Berry and Lewis T. Evans eds., Competition Law at the Turn of the Century: A New Zealand Perspective, Victoria University Press (2003).

Interview, Economists' Roundtable, Antitrust Magazine, (Spring 2003).

"The Relevance for Antitrust Policy of Theoretical and Empirical Advances in Industrial Organization," (Fall 2003), George Mason Law Review.

"The Control of Externalities in Sports Leagues: An Analysis of Restrictions in the National Hockey League," (with A. Frankel and E. Landes), Journal of Political Economy, (February 2004).

"An Empirical Investigation of the Competitive Effects of Domestic Airline Alliances," (with G. Bamberger and L. Neumann), Journal of Law and Economics, Vol. 47, No. 1, (April 2004, pp. 195-222).

"Why Barriers to Entry are Barriers to Understanding," American Economic Review, (May 2004).

"Using Economics to Improve Antitrust Policy," Milton Handler Lecture, Columbia Business Law Review, (June 2004).

"The Proper Role for Antitrust in an International Setting," (Keynote address: Second Annual Conference of the International Competition Network (ICN), Merida City, Mexico (June 25, 2003), appears as Appendix to "Using Economics to Improve Antitrust Policy", Columbia Business Law Review (June 2004).

"Econometric Analysis of Telephone Mergers," (with H. Sider) pp. 373-395 in American Bar Association, Econometrics: Legal, Practical, and Technical Issues, (2005).

"How Economics Can Improve Antitrust Doctrine Towards Tie-in Sales," (with M. Waldman), Competition Policy International, (Spring 2005).

Preface to: "Law and Economics of the Mexican Competition Laws," by Francisco Gonzalez de Cossio (2005).

"Transaction Costs, Externalities and "Two-Sided" Payment Markets," (with A. Frankel), Columbia Business Law Review, No. 3, Vol. (2005).

"Predation and the Entry and Exit of Low-Fare Carriers," (with G. Bamberger), in Advances in Airline Economics: Competition Policy and Antitrust, Darin Lee, ed., (2006).

"Why Tie An Essential Good," (with Michael Waldman), in Hahn R. ed., Antitrust Policy and Vertical Restraints, AEI-Brookings, (July 2006).

"Market Definition: Use and Abuse," Competition Policy International (Spring 2007)

Interview with Deputy Assistant Attorney General, The Antitrust Source (February 2007)

Separate Statement of Dennis W. Carlton, in The Report of the Antitrust Modernization Commission, (April 2007)

"Does Antitrust Need to be Modernized?," Journal of Economic Perspectives (Summer 2007)

"The Year in Review: Economics at the Antitrust Division 2006-2007" (with K. Heyer), Review of Industrial Organization, (2007).

"Economic Analysis of Competition Practices in the EU and the U.S.: A View from Chief Economists," (with M. Salinger), Competition Policy International (Autumn 2007).

"Mergers," Palgrave Dictionary, (with J. M. Perloff), (2008).

"Antitrust and Regulation," (with R. Picker) in N. Rose ed., Economics of Deregulation, NBER, (October 2007).

"Tying," (with M. Waldman), in W. Collins ed. Issues in Competition Law and Policy, American Bar Association, (2008).

"Barriers to Entry," in W. Collins ed. Issues in Competition Law and Policy, American Bar Association, (2008).

- "Product Variety and Demand Uncertainty: Why Mark-ups Vary with Quality," (with James D. Dana Jr.), Journal of Industrial Economics (2008)
- "Regulation, Antitrust, and Trinko," (With H. Sider), in eds. J. Kwoka and L. White, The Antitrust Revolution, (2008).
- "Proposal for a Market-Based Solution to Airport Delays," (with W. Whalen, K. Heyer and O. Richard), Regulation (2008).
- "Should 'Price Squeeze' Be A Recognized Form of Anticompetitive Conduct?," Journal of Competition Law and Economics, (2008).
- "Safe Harbors for Quantity Discounts and Bundling," (with M. Waldman), George Mason Law Review (2008).
- "How to Measure The Effectiveness of US Merger Policy," <http://voxeu.org/index.php?q=node/3344>, (2009), and a slightly revised version appears in The Economists' Voice: Vol. 6 : Iss. 7, Article 2, (2009). These are condensed versions of the subsequent paper.
- "The Need to Measure the Effect of Merger Policy and How to Do It," Antitrust, (condensed version of subsequent paper), (Summer 2008).
- "Why We Need to Measure the Effect of Merger Policy and How to Do It," Competition Policy International, (Spring 2009).
- "Appropriate Antitrust Policy Towards Single-Firm Conduct: Extraction vs. Extension" (with K. Heyer)," Antitrust, (condensed version of subsequent paper), (Summer 2008).
- "Extraction vs. Extension: the Basis for Formulating Antitrust Policy Towards Single-Firm Conduct" (with K. Heyer), Competition Policy International, (Autumn, 2008).
- "Assessing the Anticompetitive Effects of Multiproduct Pricing," (with P. Greenlee and M. Waldman), Antitrust Bulletin, (Fall, 2008).
- "Competition, Monopoly, and Aftermarkets," (with M. Waldman), Journal of Law, Economics and Organization, (April 2009).
- "Competition Policy: Beware of Using It to Harm Competition," Fair Trade, Japan, (April 2009).
- "Should Competition Policy Prohibit Price Discrimination?" (with M. Israel), Global Competition Review, (2009).
- "Mergers in Regulated Industries: Electricity," in Competition Law and Economics: Advances in Competition Policy Enforcement in the EU and North America, A. Mateus and T. Moreira editors, (forthcoming).
- "Making Markets Work," presentation at Symposium on Competition as Public Policy, May 14, 2009 (forthcoming).
- "Merger Guidelines Revisited?" an interview, Antitrust, American Bar Association, (Fall 2009).
- "Antitrust and Regulatory Issues Associated With Payment Mechanisms: Some Comments," 2009 Payment Conference, Federal Reserve Bank of Kansas City, November 11, 2009 (forthcoming).

"Why Tie a Product Consumers Do Not Use?," (with J. Gans and M. Waldman), Recipient of Inaugural Robert F. Lanzilotti Prize, awarded by the International Industrial Organization Society for Best Paper in Antitrust Economics, (2008), American Economic Journal: Microeconomics (forthcoming).

"How Should Economic Evidence be Presented and Evaluated," presented at the EU Competition Workshop, June 2009, Florence, Italy (forthcoming).

UNPUBLISHED PAPERS

"Modeling the Housing Allowance Program," M.A. Thesis, Massachusetts Institute of Technology (September 1974).

"The Cost of Eliminating a Futures Market and The Effect of Inflation on Market Interrelationships," (1984).

"The Empirical Importance of Delivery Lags as an Explanation of Demand," (1984).

"Statistical Supplement to The Antitrust Economics of Credit Card Networks: Reply to Evans and Schmalensee Comment, 63 Antitrust Law Journal 903 (1995)," (with Alan Frankel), (May 1997).

"Tying, Upgrades, and Switching Costs In Durable-Goods Markets," (with Michael Waldman), NBER Working Paper 11407, (2005).

"Antitrust and Not for Profits; The Case of Hospitals," (with C. Capps, and G. David), mimeo (2010).

EXPERT TESTIMONIAL EXPERIENCE

Testimony of Dennis W. Carlton in Re: "Vertical Integration--An Overview," Congressional Record Hearings on the Communications Act of 1978: Proceedings before the House on Bill H.R. 13105, August 3, 1978.

Testimony of Dennis W. Carlton in Re: Competitive Effects of the Proposed North Central-Southern Airline Merger: Proceedings before the Civil Aeronautics Board, Docket No. 33136, Exhibit NC/SO-T-7, October 13, 1978 and October 9, 1979 (with William M. Landes and Richard A. Posner).

Testimony of Dennis W. Carlton in Re: McNeilab, Inc.: Proceedings before the United States Department of Justice, Drug Enforcement Administration, Docket No. 78-13, March 13, 1980 and May 1980 (Oral).

Testimony of Dennis W. Carlton in Re: Acco Industries, Inc. v. Kresl Power Equipment, Inc.: In the U.S. Court of Appeals For the Seventh Circuit, Docket No. 80-2024, March 29, 1980.

Deposition, Testimony, and Rebuttal Testimony of Dennis W. Carlton in Re: Ethyl Corporation: Proceedings before the Federal Trade Commission, Docket No. 9128, November 10 & 11, 1980 (Deposition), November 13 & 14, 1980 (Testimony), February 20, 1981 (Rebuttal).

Deposition of Dennis W. Carlton in Re: Independence Tube Corporation v. Copperweld Corporation, Regal Tube Company, The Yoder Company v. David F. Grohne (counter-defendant): In the U.S. District Court for the Northern District of Illinois, Eastern Division, No. 76 C 4201, January 24, 1981.

Affidavit of Dennis W. Carlton in Re: Ellis Banking Corporation, Ellis First National Bank of Bradenton, and Ellis First Security Bank v. Barnett Banks of Florida, Inc., Barnett Bank of Manatee County, and Westside National Bank of Manatee County: In the U.S. District Court for the Middle District of Florida, Tampa Division, No. 81-693-Civ-T-H, July 28, 1981.

Deposition and Economic Report of Dennis W. Carlton in Re: Schneider Industrial Sales and Service Company, William Schneider and Mary Emily Schneider v. Acco Industries, Inc.: In the U.S. District Court for the District of New Jersey, April 19, 1982.

Deposition and Testimony of Dennis W. Carlton in Re: City of Batavia, et al. v. Commonwealth Edison Company: Proceedings before the U.S. District Court, Northern District of Illinois, Eastern Division, No. 76 C 4388, May 17, 18 & 25, 1982 (Deposition), July 22, 1982 (Testimony).

Deposition of Dennis W. Carlton in Re: M. K. Metals Inc., et al. v. National Steel Corporation: In the U.S. District Court for the Northern District of Illinois, Eastern Division, No. 79 C 1661, September 15, 1983.

Declaration and Deposition of Dennis W. Carlton in Re: Carter Hawley Hale Stores, Inc. v. The Limited, Inc., et al.: In the U.S. District Court, Central District California, No. CV 84 22000 AWT (JRX), April 21, 1984 (Declaration), April 23, 1984 (Deposition).

Verified Statements and Testimony of Dennis W. Carlton in Re: Denver & Rio Grande Western Railroad v. Santa Fe Southern Pacific Corporation et al: Proceedings before the Interstate Commerce Commission, Docket No. 30400, August 28, 1984, November 14, 1984, and May 22, 1985, (Statements), and January 30, 1985 and June 19, 1985, (Testimony).

Affidavit of Dennis W. Carlton in Re: United States of America v. Western Electric Company, Inc. and American Telephone and Telegraph Company: In the United States District Court for the District of Columbia, December 19, 1984 (with William M. Landes).

Statement of Carlton in Re: To the National Telecommunications Information Administration (NTIA) Request for Comments in Connection with the Comprehensive Study of the Structure and Regulation of the U.S. Telecommunications Industry, March 29, 1985 (with DeMuth, Landes, and Rosenfield).

Deposition and Affidavit of Dennis W. Carlton in Re: L&W Industries, Inc. v. American Standard, Inc.: In the U.S. District Court, Eastern District of Wisconsin, Civil Action No. 81-C-1409, May 14, 1985 (Deposition), August 30, 1985 (Affidavit).

Testimony of Dennis W. Carlton in Re: E. I. Du Pont De Nemours and Company's Thebaine Import Application: Proceedings before the U.S. Department of Justice, Drug Enforcement Administration, Docket No. 84-51, May 31, 1985.

Testimony of Dennis W. Carlton in Re: Joint Application of Pan American World Airways, Inc. and United Airlines, Inc., Pacific Division Transfer Case: Proceedings before the U.S. Department of Transportation, Docket No. 43065, August 7, 1985 (with William M. Landes and Sam Peltzman).

- Deposition of Dennis W. Carlton in Re: General Motors "THM 200" Transmission Litigation: Proceedings before the U.S. District Court, Northern District of Illinois, Eastern Division, No. 79 C 1249, 80 C 2151 and 85 C 4805, July 2, 1986.
- Affidavit of Dennis W. Carlton in Re: Norwest Bank Fire Case: Proceedings before the U.S. District Court, Fourth Judicial District, State of Minnesota, Court File No. 83-08122, August 28, 1986.
- Affidavit of Dennis W. Carlton in Re: Policy and Rules Concerning Rates for Dominant Carriers: Before the Federal Communications Commission, Washington, D.C., Docket No. 87-313, October 16, 1987.
- Deposition of Dennis W. Carlton in Re: Research Institute for Medicine and Chemistry, Inc. v. Wisconsin Alumni Research Foundation: In the U.S. District Court, Western District of Wisconsin, Case No. 85-C-1060-D, October 20 & 21, 1986.
- Affidavit and Deposition of Dennis W. Carlton in Re: United States Football League, et al. v. National Football League, et al.: In the U.S. District Court, Southern District of New York, 84 Civ. 7484 (PKL), November 24, 1986 (Affidavit), February 26, 1986 and December 4, 1986 (Deposition).
- Verified Statements of Dennis W. Carlton in Re: Coal Trading Corporation, et al. v. The Baltimore and Ohio Railroad Co., et al.: Before the Interstate Commerce Commission, ICC Docket No. 38301S, December 16, 1986 and September 8, 1987.
- Testimony of Dennis W. Carlton in Re: The Application of Pacific Bell, a Corporation, for Authority to Increase Certain Intrastate Rates and Charges Applicable to Telephone Services Furnished within the State of California, California Public Utilities Commission, Application No. 85-01-034, December 19, 1986 and January 22 & 28, 1987.
- Deposition of Dennis W. Carlton in Re: John H. Torphy v. Touche Ross & Co., et al: In the Circuit Court Dane County, State of Wisconsin, Case No. 82-CV-4033, August 25, 1987.
- Deposition of Dennis W. Carlton in Re: Martin Exploration Management Company, et al. v. Panhandle Eastern Corporation, et al.: In the U.S. District Court for the District of Colorado, Civil Action No. 86-Z-804, May 5, 6 & 18, 1988.
- Deposition of Dennis W. Carlton in Re: The Dow Chemical Company v. Halliburton Company and The Dow Chemical Company v. Mississippi Power & Light Company: In the U.S. District Court for the Northern District of Mississippi Greenville Division, No. GC-78-31-GD-D and No. GC-78-32-GD-D, June 16, 1988.
- Statements and Testimony of Dennis W. Carlton in Re: Trailer Train Company et al., Approval of Pooling of Car Service With Respect to Flat Cars: Before the Interstate Commerce Commission, Finance Docket No. 27590. (Sub-No. 1), July 7 & 14, 1988 (Statements), July 25 & 26, 1988 (Testimony).
- Testimony of Dennis W. Carlton in Re: Pontarelli Limousine, Inc. v. City of Chicago, Finance Docket No. 83-C-6716, September 25 & 26, 1989.
- Deposition of Dennis W. Carlton in Re: Great Northern Nekoosa Corporation v. Georgia-Pacific Corporation: Before the United States District Court District of Connecticut, Civ. Action No. B-89-607-WWE, December 28, 1989 and January 15, 1990.

- Testimony of Dennis W. Carlton in Re: The Matter of the Physicians and Surgeons Medical Malpractice Insurance Rates of St. Paul Fire & Marine Insurance Company: Before the State of Minnesota Office of Administrative Hearings for the Commissioner of Commerce, O.A.H. Docket No. 0-1004-3412-2, January 1990.
- Deposition of Dennis W. Carlton in Re: Dale A. Ervin, et al. v. Amoco Oil Company, et al.: In the District Court, City and County of Denver, State of Colorado, No. 88-CV-11994, September 5, 1990.
- Reply Affidavit of Dennis W. Carlton in Re: United States of American v. Western Electric Company Inc. and American Telephone and Telegraph Company: In the United States District Court for the District of Columbia, Civil Action No. 82-0192, January 10, 1991 (with George J. Stigler).
- Testimony of Dennis W. Carlton in Re: Westreco, Inc. v. Commissioner of Internal Revenue: In the United States Tax Court, Washington, D.C. 20217, Docket No. 24078-88, January 29, 1991.
- Deposition, Testimony, and Rebuttal Testimony of Dennis W. Carlton in Re: In the Matter of Marathon Oil Company and Phillips Petroleum Company: Before the Department of Revenue, State of Alaska, Case No. 89314, April 23 & 24, 1991 (Deposition), March 28, 1991 (Expert Report), June 19, 1991 (Testimony), July 22, 1991 (Rebuttal Testimony), October 3 & 4, 1991 (Oral).
- Deposition of Dennis W. Carlton in Re: Martin Exploration Management Company, et al. v. Panhandle Eastern Pipeline Corporation, et al.: In the U.S. District Court for the District of Colorado, Civil Action No. 91-N-110, February 5, 1992.
- Deposition, Affidavit and Testimony of Dennis W. Carlton in Re: United States of America v. Brown University, et al.: In the U.S. District Court For the Eastern District of Pennsylvania, Civil Action No. 91-CV-3274, February 18 & 19, 1992 (Deposition), April 28, 1992 (Affidavit), July 8 & 9, 1992 (Testimony).
- Deposition of Dennis W. Carlton in Re: United States of America, People of The State of California, et al. v. J. B. Stringfellow, Jr., et al.: In the United States District Court Central District of California, No. CIV 83-2501 JMI, March 10 & 11, 1992.
- Affidavit of Dennis W. Carlton in Re: SCFC ILC, Inc. d/b/a MountainWest Financial v. Visa U.S.A., Inc.: In the U.S. District Court for the District of Utah, Central Division, Civil No. 2:91-cv-047B, June 25, 1992.
- Deposition and Testimony of Dennis W. Carlton in Re: Adcom, Incorporated, Cutrone Communications, Incorporated, Great Southern Communications Incorporated, Nola Communications Incorporated and Conrad Communications, Incorporated v. Nokia Corporation, Nokia-Mobira Oy, Nokia-Mobira, Incorporated, Nokia, Incorporated, Nokia Data Communications and Cue Paging Corporation: In the United States District Court for the Eastern District of Louisiana, Civil Action Number 90-4088, November 3 & 4, 1992 (Deposition), February 9 & 10, 1993 (Testimony).
- Statement, Supplemental Statement and Deposition of Dennis W. Carlton in Re: City of Dillingham, et al. v. Western Pioneer, Inc., et al., and City of Nome v. Western Pioneer, Inc., et al.: In the United States District Court for the District of Alaska, No. A89-014 Civil (Consolidated for Pre-Trial Proceedings with No. N89-004 Civil), November 6, 1992 (Statement and Supplemental Statement), November 24, 1992 (Deposition).

- Verified Statement of Dennis W. Carlton in Re: Kansas City Southern Industries, Inc., The Kansas City Southern Railway Company and K&M Newco, Inc. -- Control -- MidSouth Corporation, MidSouth Rail Corporation, MidLouisiana Rail Corporation, SouthRail Corporation and TennRail Corporation, Before the Interstate Commerce Commission, Finance Docket No. 32167, May 1993.
- Verified Statements and Deposition of Dennis W. Carlton in Re: Union Pacific Corporation, Union Pacific Railroad Company and Missouri Pacific Railroad Company -- Control -- Chicago and North Western Holdings Corp. and Chicago and Northwestern Transportation Company: Before the Interstate Commerce Commission, Finance Docket No. 32133, May 24, 1993, June 21, 1993, and November 24, 1993 (Statements), March 17, 1994 and July 26, 1994 (Deposition).
- Verified Statement of Dennis W. Carlton in Re: Application of TTX Company and Certain Common Carriers by Railroad For Approval of Amendment of Pooling Agreement and Car Contract Extending Their Terms, Before the Interstate Commerce Commission, Finance Docket No. 27590 (Sub-No. 2), November 19, 1993.
- Deposition of Dennis W. Carlton in Re: Merck & Co., Inc. v. Alcon Laboratories, Inc., In the United States District Court for the District of Delaware, No. C.A. 92-691, December 14, 1993.
- Deposition and Affidavit of Dennis W. Carlton in Re: Northwest Airlines, Inc. v. American Airlines, Inc., Before the United States District Court, District of Minnesota, Fourth Division, C.V. No. 4-91-539, February 22 & 23, 1994, May 16 & 17, 1995, and July 8, 1997 (Deposition); and February 20, 1995 and May 9, 1996 (Affidavit).
- Testimony of Dennis W. Carlton in Re: Florida Power & Light Company: Before the Federal Energy Regulatory Commission, Docket Nos. ER93-465-000, ER93-507-000, ER-93-922-000, and EL94-12-000, April 5, 1994, October 19, 1994, and June 22, 1995.
- Testimony of Dennis W. Carlton in Re: The Matter of Touchfax Information Systems Inc. and Landis & Gyr Communications: Before the American Arbitration Association, No. 13-T-133-00260-93, May 10, 1994.
- Affidavit and Declaration of Dennis W. Carlton in Re: United States of America v. Western Electric Company, Inc., and American Telephone and Telegraph Company: Before the United States District Court for the District of Columbia, Civil Action No. 82-0192, February 28, 1994 (Affidavit with Kenneth J. Arrow), May 30, 1995 (Declaration with Kenneth J. Arrow).
- Affidavit and Testimony of Dennis W. Carlton in Re: Leonard R. Kahn v. Emerson Electric Co., a Missouri corporation; Hazeltine Corporation, a Delaware corporation; and Motorola, Inc., a Delaware corporation; John Doe corporations 1-x; and John Does 1-x, individually; Before the United States District Court, for the Eastern District of New York, 92 Civ. 3063 (ADS), October 20, 1994 (Affidavit with Alan S. Frankel), May 22, 1995 (Testimony with Alan S. Frankel).
- Deposition and Testimony of Dennis W. Carlton in Re: Federal Trade Commission v. B.A.T. Industries P.L.C., Brown and Williamson Tobacco Corporation; American Brands, Inc.; and American Tobacco Company, Before the United States District Court, Southern District of New York, C.V. No. 94 Civ. 7849, November 20, 1994 (Deposition), December 14, 1994 (Testimony).
- Affidavit, Supplemental Affidavit and Deposition of Dennis W. Carlton in Re: Weatherford Roofing Company v. Employers National Insurance Company and Employers Casualty Company et al: In the United States District Court for the District of Dallas County, Texas, 116th Judicial District,

No. 91-05637, May 5, 1995 (Affidavit), May 9-10 & June 1, 1995 (Deposition), October 20, 1995 (Supplemental Affidavit).

Affidavit of Dennis W. Carlton in Re: Airline Travel Agency Commission Antitrust Litigation: In the United States District Court for the District of Minnesota, No. 4-95-107, June 14, 1995.

Declaration of Dennis W. Carlton in Re: Donnelly Corporation v. Gentex Corporation: In the United States District Court for the Western District of Michigan, Southern Division, Case No. 1:93 CV 530, October 20, 1995.

Testimony of Dennis W. Carlton in Re: Hearings on Global and Innovation-based Competition, before the Federal Trade Commission October 25, 1995.

Report and Deposition of Dennis W. Carlton in Re: Brand Name Prescription Drugs Antitrust Litigation, In the United States District Court for the Northern District of Illinois, Eastern Division, MDL No. 997, November 20, 1995 (Report), December 18 & 19, 1995 (Deposition).

Expert Report and Deposition of Dennis W. Carlton in Re: Johnson Matthey v. General Motors (Antitrust Counterclaim), District Court for the Eastern District of Wisconsin, No. 93 C 0931, January 9, 1996 (Expert Report), February 14, 1996 (Deposition).

Brief of Evidence, Summary of Evidence, and Testimony of Dennis W. Carlton on Behalf of Defendants in Re: Shell (Petroleum Mining) Company Limited and Todd Petroleum Mining Company Limited v. Kapuni Gas Contracts Limited and Natural Gas Corporation of New Zealand Limited, In the High Court of New Zealand, Auckland Registry, Commercial List, CL 5/94, April 2, 1996 (Brief of Evidence), July 18, 1996 (Summary of Evidence), July 18-19, 1996 (Testimony).

Expert Report, Deposition, and Testimony of Dennis W. Carlton in Re: The Matter of the Arbitration Between Sprint Communications Company L.P. and Network 2000 Communications Corporation, Arbitration Case Number 57 181 0013 94, July 15, 1996 (Expert Report with H. Sider), August 12, 1996 (Deposition), September 27, 1996 (Testimony).

Testimony, Prepared Statement and Affidavit of Dennis W. Carlton on behalf of Sacramento Municipal Utility District in Re: Pacific Gas & Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company: Before the Federal Energy Regulatory Commission Technical Conference on Market Power & Transmission Pricing, Docket Nos. ER96-1663-000, EC96-19-000, EL96-48-000, September 12, 1996 (Testimony and Prepared Statement), January 16, 1997 (Affidavit with G. Bamberger).

Declaration of Dennis W. Carlton in Re: United States of America v. International Business Machines: In the United States District Court for the Southern District of New York, Civil Action No. 72-344 (AGS), November 12, 1996.

Expert Report, Affidavit Rebuttal and Deposition of Dennis W. Carlton in Re: Bell Atlantic Corporation and DSC Communications Corporation v. AT&T Corporation and Lucent Technologies Inc., Civil Action No. 5-96CV45, December 4, 1996 (Expert Report with R.E. Olley and D.S. Sibley), January 10, 1997 (Affidavit Rebuttal with R.E. Olley and D.S. Sibley), January 21, 1997 (Deposition).

Affidavit of Dennis W. Carlton in Re: Advanta Corp., Advanta National Bank U.S.A., and Advanta National Bank v. Visa U.S.A., Inc. and Mastercard International, Inc.: In the United States

District Court for the Eastern District of Pennsylvania, Civil Action No. 96-CV-7940, January 21, 1997.

Deposition, Testimony, and Surrebuttal Testimony of Dennis W. Carlton in Re: In the Matter of Toys "R" Us, Inc.: In the United States of America Before the Federal Trade Commission, File No. 9278, March 16, 1997 (Deposition), April 16 and 25, 1997 (Testimony), June 3, 1997 (Surrebuttal Testimony).

Deposition of Dennis W. Carlton in Re: In the Matter of Theresa Aguilar, et al vs. Atlantic Richfield Corporation et al: In the Superior Court of the State of California In and For the County of San Diego, File No. 700810, September 30, 1997 (Deposition).

Report of Dennis W. Carlton in Re: Few Ready Mix Concrete Co., v. Transit Mix Concrete & Materials Co., et al: In the United States District Court for the Eastern District of Texas Lufkin Division, No. 9:96-CV-86, October 31, 1997 (with W. J. Lynk).

Verified Statement, Depositions, Verified Reply Statement, and Verified Rebuttal Statement of Dennis W. Carlton in Re: CF Industries, Inc. v. Koch Pipeline Company, L.P.: In the United States of America Before the Department of Transportation Surface Transportation Board, No. 41685, November 7, 1997 (Verified Statement), December 19, 1997 (Deposition), January 8, 1998 (Verified Reply Statement), February 3, 1998 (Deposition), February 20, 1998 (Verified Rebuttal Statement).

Expert Witness Report, Deposition and Affidavits of Dennis W. Carlton in Re: Industrial Silicon Antitrust Litigation: In the United States District Court for the Western District of Pennsylvania, No. 95-2104, January 9, 1998 (Expert Witness Report), February 10-11, 1998 (Deposition), April 8, 1998 (Affidavit), June 29, 1998 (Affidavit).

Declaration, Affidavit (NY), Affidavit (FL) and Second Declaration of Dennis W. Carlton in Re: Applications of WorldCom, Inc. and MCI Communications Corporation for Transfer of Control of MCI Communications Corporation to WorldCom, Inc.: Before the Federal Communications Commission, CC Docket No. 97-211, January 25, 1998 (with H. Sider); Before the New York State Public Service Commission, No. 97-C-1804, February 16, 1998 (Affidavit with H. Sider); Before the Florida Public Service Commission, No. 971375-TP, February 27, 1998 (Affidavit with H. Sider); Before the Federal Communications Commission, CC Docket No. 97-211, March 19, 1998 (Second Declaration with H. Sider).

Expert Report and Deposition of Dennis W. Carlton in Re: Bepco, Inc., et al v. AlliedSignal Inc. and AlliedSignal Truck Brake System Co.: In the United States District Court for the Middle District of North Carolina, Winston-Salem Division, No. 6:96CV00274, February 3, 1998 (Expert Report), March 3, 1998 (Deposition).

Affidavit, Reports, Reply Affidavit, Reply Report, Prepared Statements and Testimony of Dennis W. Carlton in Re: The Merger of SBC Communications Inc. with Ameritech Corporation: Before the Federal Communications Commission, CC Docket No. 98-141, July 20, 1998 (Affidavit and Report), November 12, 1998 (Reply Affidavit and Reply Report), February 5, 1999 (Prepared Statements and Testimony as a Participant in the Round Table on the Economics of Mergers Between Large ILECS), April 13, 1999 (Report to the FCC on Supplemental Analysis of the Katz/Salop Hypothesis).

Report and Supplemental Report of Dennis W. Carlton in Re: Riverside Pipeline Company v. Panhandle Eastern Pipeline Company: In the U.S. District Court for the Western District of

Missouri, No. 97-0642-CV-W-4, September 20, 1998 (Report with H. Sider), January 7, 1999 (Supplemental Report).

Statement of Dennis W. Carlton in Re: Enforcement Policy Regarding Unfair Exclusionary Conduct in the Air Transportation Industry: Before the Department of Transportation, Office of the Secretary, Washington, D.C., Docket No. OST-98-3713, September 24, 1998 (with G. Bamberger).

Report and Deposition of Dennis W. Carlton in Re: The Procter & Gamble Company, et al. vs. Amway Corporation, et al.: In the U.S. District Court for the Southern District of Texas, Houston Division, January 8, 1999 (Report), February 9, 1999 (Deposition).

Responsive Direct Testimony, Prepared Answering Testimony (OK), Prepared Answering Testimony and Exhibits (FERC) of Dennis W. Carlton for Intervenor Oklahoma Gas and Electric Company in Re: Joint Application of American Electric Power Company, Inc., Public Service Company of Oklahoma and Central and South West Corporation Regarding Proposed Merger: Before the Corporation Commission of the State of Oklahoma, Cause No. PUD 980000444, March 29, 1999 (with G. Bamberger); United States of American Before the Federal Energy Regulatory Commission FERC Docket Nos. ER98-40-000, ER98-2770-000, ER98-2786-000, April 27, 1999 (with G. Bamberger).

Report and Declaration of Dennis W. Carlton in Re: Telnet Communications, Inc., et al. v. WorldCom, Inc., et al.: In the United States District Court for the Southern District of Texas, Houston Division, No. H-98-2020, March 30, 1999 (Report), April 28, 1999 (Declaration).

Expert Report, Deposition and Supplemental Report of Dennis W. Carlton in Re: United States of America vs. American Society of Composers, Authors and Publishers in the Matter of the Application of Turner Broadcasting Systems Inc. for the Determination of Reasonable License Fees: Before the United States District Court, Southern District of New York, Civ. 13-95 (WCC) (Referred to Magistrate Judge Dolinger), April 15, 1999 (Expert Report), July 28-29 and August 5, 1999 (Deposition), December 16, 1999 (Supplemental Report).

Declaration, Deposition and Reply Declaration of Dennis W. Carlton in Re: Visa Check/MasterMoney Antitrust Litigation: Before the United States District Court, Eastern District of New York, No. CV 96-5238 (JB) RLM), April 15, 1999 (Declaration), May 25, 1999 and June 1, 1999 (Deposition), August 1, 1999 (Reply Declaration).

Report and Deposition of Dennis W. Carlton in Re: Zeneca Limited, Zeneca Holdings Inc., and Zeneca Inc. v. Rhone-Poulenc Inc. and Rhone-Poulenc AG Company: In the United States District Court for the District of Delaware, No. 97-652-GMS, May 17, 1999 (Report), June 16, 1999 (Deposition).

Affidavit and Reply Affidavit of Dennis W. Carlton in Re: Andersen Consulting Business Unit Member Firms v. Arthur Andersen Business Unit Member Firms and Andersen Worldwide Societe Cooperative: Before the International Court of Arbitration of the International Chamber of Commerce, No. 9797/CK, June 2, 1999 (Affidavit), September 13, 1999 (Reply Affidavit).

Affidavit, Report, Rebuttal Report, Reply Report, Rebuttal Report and Testimony of Dennis W. Carlton in Re: The Commissioner of Competition and Superior Propane Inc. and ICG Propane Inc.: Before The Competition Tribunal, No. CT-98/2, August 17, 1999 (Affidavit and Report), September 14, 1999 (Rebuttal Report with G. Bamberger), September 19, 1999 (Reply Report with G. Bamberger), September 27, 1999 (Rebuttal Report to Professor Michael Ward with G. Bamberger), December 13-14, 1999 (Testimony with G. Bamberger).

- Declaration of Dennis W. Carlton in Re: Merger of Qwest Communications International Inc. and U S WEST, Inc.: Before the Federal Communications Commission, CC Docket No. 99-272, October 18, 1999 (with Hal Sider).
- Prepared Direct Testimony, Deposition and Cross-Examination of Dr. Dennis W. Carlton on behalf of Sierra Pacific Power Company in Re: United States of America Before the Federal Energy Regulatory Commission: Docket Nos. ER99-28-001, ER99-28-003, EL99-38-002 and ER99-945-002, November 17, 1999 (Prepared Direct Testimony), January 10, 2000 (Deposition), April 26 and May 1, 2000 (Cross-Examination).
- Expert Report and Deposition of Dennis W. Carlton in Re: United States of America v. Northwest Airlines Corporation and Continental Airlines, Inc.: In the United States District Court for the Eastern District of Michigan, Southern Division, Civil Action No. 98-74611, January 27, 2000 (Expert Report), June 7, 2000 (Deposition).
- Declaration and Ex Parte Declaration of Dennis W. Carlton in Re: Joint Applications of MCI WorldCom, Inc., and Sprint Corporation for Consent to Transfer Control: Before the Federal Communications Commission, CC Docket No. 99-333, February 18, 2000 (Declaration with H. Sider), May 10, 2000 (Ex Parte Declaration with H. Sider).
- Testimony, Rebuttal Testimony and Cross-Examination of Dennis W. Carlton on behalf of Sacramento Municipal Utility District in Re: Application of Pacific Gas and Electric Company to Market Value Hydroelectric Generating Plants and Related Assets Pursuant to Public Utilities Code Sections 367(b) and 851: Before the Public Utilities Commission of the State of California, application No. 99-09-053, March 2, 2000 (Testimony), March 16, 2000 (Rebuttal Testimony), May 9, 2000 (Cross-Examination).
- Affidavit, Deposition and Reply Affidavit of Dennis W. Carlton in Re: Gregory F. Daniel, M.D., et al., v. American Board of Emergency Medicine, et al: In the United States District Court for the Western District of New York, Civil Action No. 90-CV-1086A, March 3, 2000 (Affidavit), April 17 and 18, 2000 (Deposition), July 12, 2000 (Reply Affidavit).
- Expert Report, Reply Expert Report, Deposition and Supplemental Report of Dennis W. Carlton in Re: CSX Transportation, Inc. V. Qwest Communications International, Inc.: In the United States District Court for the Middle District of Florida, Jacksonville Division, Civil Action No. 99-412-CIV-J-21C, July 19, 2000 (Expert Report), October 11, 2000 (Reply Expert Report), January 10-11, 2001 (Deposition), July 18, 2001 (Supplemental Report).
- Reply Declaration of Dennis W. Carlton in Re: Joint Application of Northpoint Communications and Verizon Communications for Authority to Transfer Control of Blanket Authorization to Provide Domestic Interstate Telecommunications Services as a Non-Dominant Carrier: Before the Federal Communications Commission, Washington DC, Docket No. 00-157, October 17, 2000 (Reply Declaration with H. Sider).
- Declaration and Reply Declaration of Dennis W. Carlton in Re: In the Matter of Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities: Before the Federal Communications Commission, Washington DC, Docket No. 00-195, December 1, 2000 (Declaration with K. Arrow and G. Becker), January 10, 2001 (Reply Declaration with K. Arrow and G. Becker).
- Report, Rebuttal Report, Deposition, Testimony, and Supplemental Report of Dennis W. Carlton in Re: Rambus Inc. v. Infineon Technologies AG, Infineon Technologies North America Corp.,

Infineon Technologies, Inc., Infineon Technologies Holding North America Corp., and Infineon Technologies Corp.: In the United States District Court for the Eastern District of Virginia, Richmond Division, Civil Action No. 3:00CV524, December 20, 2000 (Report), January 19, 2001 (Rebuttal Report), February 6, 2001 (Deposition), May 3, 2001 (Testimony), February 13, 2004 (Supplemental Report).

Reports, Rebuttal Reports, Deposition and Declaration of Dennis W. Carlton in Re: Micron Technology, Inc. v. Rambus Inc.: In the United States District Court for the District of Delaware, Civil Action No. 00-792, March 28, 2001 (Report), April 13, 2001 (Rebuttal Report), April 18, 2001 (Deposition), and August 17, 2001 (Report), September 17, 2001 (Rebuttal Report), Declaration (October 1, 2001).

Expert Report, Deposition and Testimony of Dennis W. Carlton in Re: Amgen Inc. v. Ortho Pharmaceutical Corp.: Endispute Arbitration, Chicago, Illinois, August 31, 2001 (Expert Report), November 27-28, 2001 (Deposition), May 9-10, 2002 (Testimony).

Testimony of Dennis W. Carlton in Re: Empirical Industrial Organization Roundtable: Before the Federal Trade Commission, Matter No. P015602 (September 11, 2001).

Expert Report of Dennis W. Carlton in Re: Artemio Del Serrone, et al. v. Philip Morris Companies, Inc., et al.: In the Circuit Court for the County of Wayne, State of Michigan, No. 00-004035 CZ, December 19, 2001.

Expert Report and Deposition of Dennis W. Carlton in Re: Cigarette Price-Fixing Litigation and related cases, Holiday Wholesale Grocery Company, et al. v. Philip Morris Incorporated, et al.: In the United States District Court for the Northern District of Georgia, Atlanta Division, No. 1:00-CV-0447-JOF, MDL No. 1342, December 19, 2001 (Expert Report), January 23, 2002 (Deposition).

Expert Report and Deposition of Dennis W. Carlton in Re: Flat Glass Antitrust Litigation: In the United States District Court for the Western District of Pennsylvania, No. 97-550, MDL NO. 1200, December 20, 2001 (Expert Report), February 4-6, 2002 (Deposition).

Expert Report, Supplemental Expert Report, and Deposition of Dennis W. Carlton in Re: Symbol Technologies et al v. Lemelson Medical et al and Cognex Corporation v. Lemelson Medical et al: In the United States District Court, District of Nevada, CV-S-01-701-PMP (RJJ) and CV-S-01-702-PMP (RJJ), December 14, 2001 (Expert Report), May 7, 2002 (Supplemental Expert Report), October 3, 2002 (Deposition).

Declaration and Reply Declaration of Dennis W. Carlton in Re: Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services: Before the Federal Communications Commission, Washington DC, CC Docket No. 01-337, FCC 01-360, March 1, 2002 (Declaration with H. Sider), April 22, 2002 (Reply Declaration with H. Sider and G. Bamberger).

Declaration, Deposition, Reply Declaration, and Preliminary Injunction Hearing Testimony of Dennis W. Carlton in Re: Sun Microsystems Inc. v. Microsoft Corporation: In the United States District Court, Northern District of California, San Jose Division, Civil Action No. C 02-01150 RMW (PVT), March 8, 2002 (Declaration), June 27, 2002 (Deposition), August 9, 2002 (Reply Declaration); In the United States District Court for the District of Maryland, Northern Division, MDL No. 1332, December 4, 2002 (Preliminary Injunction Hearing Testimony).

Declaration of Dennis W. Carlton in Re: In the Matter of Applications for Consent to the Transfer of Control of Licenses, Comcast Corporation and AT&T Corp., Transferors, to AT&T Comcast

Corporation, Transferee: Before the Federal Communications Commission, Washington, D.C., MB Docket No. 02-70, April 26, 2002

Declaration of Dennis W. Carlton In Re Shirley Robinson, et al., v. Bell Atlantic Corporation d/b/a Verizon Communications, et al., United States District Court Eastern District of Kentucky, Lexington Division, Case No. 01-98, August 30, 2002 (with R. Gertner).

Expert Report and Deposition of Dennis W. Carlton in Re: Duramed Pharmaceuticals, Inc. v. Wyeth-Ayerst Laboratories, Inc.: In the United States District Court, Southern District of Ohio, Western Division at Cincinnati, Civil Action No. C-1-00-735, August 19, 2002 (Expert Report), September 24, 2002 (Deposition).

Affidavit of Dennis W. Carlton in Re: USG Corporation, a Delaware Corporation, et al, In the United States Bankruptcy Court for the District of Delaware, Case No. 01-2094 (RJN), August 20, 2002 (Affidavit).

Expert Report, Expert Rebuttal Report, and Deposition of Dennis W. Carlton in Re: Sarah Futch Hall, d/b/a Travel Specialist, et al., on behalf of themselves and all others similarly situated v. United Airlines, Inc., et al.: In the United States District Court for the Eastern District of North Carolina Southern Division, No. 7:00-CV-123-BR(1), October 4, 2002 (Expert Report), November 13, 2002 (Expert Rebuttal Report), November 21, 2002 (Deposition).

Initial Report and Deposition of Dennis W. Carlton in Re: Sunrise International Leasing Corp., v. Sun Microsystems Inc.: In the United States District Court for the District of Minnesota, Civil Action No. 01-CV-1057 (JMR/FLN), March 27, 2003 (Initial Report with H. Sider), July 30, 2003 (Discovery Deposition).

Declaration and Reply Declaration of Dennis W. Carlton Before the Federal Communications Commission, Washington DC, in Re: Matter of Section 272(f) (1) Sunset of the BOC Separate Affiliate and Related Requirements, 2000 Biennial Regulatory Review Separate Affiliate Requirements of Section 64.1903 of the Commission's Rules, WC Docket No. 02-112, CC Docket No. 00-175, June 30, 2003 (Declaration with H. Sider and A. Shampine), July 28, 2003 (Reply Declaration with H. Sider and A. Shampine).

Economic Analysis, Response and Economic Analysis of Dennis W. Carlton, "Economic Analysis of the News Corporation/DIRECTV Transaction," submitted to the Federal Communications Commission, MB Docket No. 03-124, July 1, 2003 (Economic Analysis with J. Halpern and G. Bamberger); September 8, 2003 (Response with J. Halpern and G. Bamberger); October 2, 2003 (Economic Analysis to DOJ with J. Halpern and G. Bamberger).

Supplemental Declarations of Dennis W. Carlton in Re: Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services: Before the Federal Communications Commission, Washington DC, CC Docket No. 01-337, FCC 01-360, July 11, 2003 (with H. Sider), September 3, 2003 (with H. Sider).

Expert Report and Deposition of Dennis W. Carlton In Re: D. Lamar DeLoach, et al. v. Philip Morris Companies, Inc., et al. (R.J. Reynolds Tobacco Co.), In the United States District Court for the Middle District of North Carolina, Greensboro Division, Case No. 00-CV-1235, October 2, 2003 (Expert Report), October 30, 2003 (Deposition).

Report of Dennis W. Carlton on behalf of Verizon, November 18, 2003 (with K. Arrow, G. Becker, and R. Solow).

- Report and Deposition of Dennis W. Carlton In Re: Francis Ferko and Russell Vaughn as Shareholders of Speedway Motorsports, Inc. v. (NASCAR) National Association for Stock Car Auto Racing, Inc., International Speedway Corporation, and Speedway Motorsports, Inc.; In the United States District Court Eastern District of Texas Sherman Division, Case No. 4:02cv50, Honorable Richard A. Schell, December 15, 2003 (Report), January 21-22, 2004 (Deposition).
- Declaration, Deposition, and Rebuttal Declaration of Dennis W. Carlton In Re: CSC Holdings, Inc. v. Yankees Entertainment and Sports Network, LLC., before the American Arbitration Association, Arbitration Proceeding, Case No 13 181 02839 03, January 23, 2004 (Declaration), February 5, 2004 (Deposition), February 24, 2004 (Rebuttal Declaration).
- Expert Report, Deposition, Expert Report, Deposition and Testimony of Dennis W. Carlton In Re: Jamsports and Entertainment, LLC v. Paradama Productions, Inc., d/b/a AMA Pro Racing, Clear Channel Communications, Inc., SFX Entertainment, Inc., d/b/a Clear Channel Entertainment SFX Motor Sports, Inc., d/b/a Clear Channel Entertainment-Motor Sports, In the United States District Court for the Northern District of Illinois Eastern Division, Case No. 02 C 2298, March 8, 2004 (Expert Report), April 19 and 20, 2004 (Deposition), September 28, 2004 (Expert Report), October 4, 2004 (Deposition), March 11, 14, 2005 (Trial Testimony).
- Affidavit in Reply, Second Affidavit, and Testimony of Dennis W. Carlton In Re: The Matter of an Appeal from Determinations of the Commerce Commission Between Air New Zealand Limited Between Qantas Airways Limited and The Commerce Commission, In the High Court of New Zealand Auckland Registry Commercial List Under The Commerce Act 1986, CIV 2003 404 6590, June 7, 2004 (Affidavit), July 6, 2004 (Second Affidavit), July 13-16, 2004 (Testimony).
- Expert Report and Deposition of Dennis W. Carlton in Re: J.B.D.L. Corp. d/b/a Beckett Apothecary, et al., v. Wyeth-Ayerst Laboratories, Inc., et al., Civil Action No. C-1-01-704. CVS Meridian, Inc., and Rite Aid Corp., v. Wyeth, Civil Action No. C-1-03-781, in the United States District Court for the Southern District of Ohio Western Division, July 7, 2004 (Expert Report), September 3, 2004 (Deposition).
- Declaration of Dennis W. Carlton on behalf of Bellsouth Telecommunications, Inc., in the matter of AT&T Corp., v. Bellsouth Telecommunications, Inc., before the Federal Communications Commission, Washington, DC 20554, July 20, 2004 (with H. Sider).
- Expert Report, Sur-Reply Expert Report, Deposition, Affidavit and Supplemental Report of Dennis W. Carlton in Re: Flat Glass Antitrust Litigation: In the United States District Court for the Western District of Pennsylvania, Master Docket MISC No. 97-550, relates to Jeld-Wen, Inc. Docket No. 2-99-875, July 6, 2004 (Expert Report), September 9, 2004 (Sur-Reply Expert Report), November 1-2, 2004 (Deposition), July 20, 2005 (Affidavit), August 16, 2005 (Supplemental Report).
- Expert Report, Declaration and Deposition of Dennis W. Carlton (T-Mobile, Sprint PCS, AT&T Wireless, Cingular, Verizon Wireless Reports) in Re: Wireless Telephone Services Antitrust Litigation: In the United States District Court Southern District of New York, 02 Civ. 2637, December 20, 2004 (Expert Report), February 9, 2005 (Deposition).
- Declaration, Testimony, Reply Declaration/Rebuttal, Joint Applicants' Statement, Ex Parte, Rebuttal Testimony and Rejoinder Testimony of Dennis W. Carlton in Re: In the Matter of the Proposed Merger of AT&T Corp.,(AT&T) and SBC Communications Inc. (SBC), Before the FCC, February 21, 2005 (Declaration with H. Sider); Before the New Jersey Public Utility Commission, May 4, 2005 (Testimony with H. Sider); Before the FCC, May 9, 2005 (Reply Declaration/Rebuttal with H. Sider); Before the Pennsylvania Utility Commission, May 12, 2005 (Joint Applicants'

Statement with H. Sider); Before the FCC, June 28, 2005 (Ex Parte with H. Sider); Before the Pennsylvania Public Utility Commission, July 15, 2005 (Rebuttal Testimony with H. Sider); Before the Pennsylvania Public Utility Commission, August 5, 2005 (Rejoinder Testimony with H. Sider).

Expert Report of Dennis W. Carlton in Re: In the matter of Echostar Satellite, L.L.C., v. Fox Television Holdings, Inc., Fox/UTV Holdings, Inc., News Corporation: Before the American Arbitration Association, Case No. 71 472 E 00690 04, March 2, 2005 (with G. Bamberger).

Declaration, Reply Declaration, Proprietary Report and Redacted Reports of Dennis W. Carlton in Re: In the matter of Verizon Communications Inc., and MCI, Inc., Applications for Approval of Transfer of Control, Before the FCC (Federal Communications Commission), Washington, DC 20554, WC Docket No. 05-75, March 10, 2005 (Declaration with G. Bamberger and A. Shampine), May 24, 2005 (Reply Declaration with A. Shampine), August 5, 2005 (Proprietary and Redacted Report with G. Bamberger and A. Shampine), September 9, 2005 (Redacted Report with G. Bamberger and A. Shampine).

Expert Report, Deposition, Affidavit, Supplemental Report and Testimony of Dennis W. Carlton in Re: Celanese Ltd., et al. v. JO Tankers AS, et al, April 8, 2005 (Expert Report); and May 6, 2005 (Deposition); June 10, 2005 (Affidavit); October 10, 2005 (Supplemental Report), November 9-10, 2005 (Testimony).

Affidavit of Dennis W. Carlton in Re: In the matter of Beatrice C. Romero vs. Philip Morris Price Fixing Allegations: In the United States First District Court State of New Mexico County of Rio Arriba, April 15, 2005.

Deposition, Expert Reports, Written Direct Examination, Deposition and Trial Testimony of Dennis W. Carlton in Re: United States of America v. Philip Morris USA Inc. (f/k/a Philip Morris Incorporated), et al., In the United States Court for the District of Columbia, Civil Action No. 99-CV- 2496 (GK), September 10, 2002 (Deposition); April 29, 2005 (Expert Report); May 3, 2005 (Written District Examination); May 10, 2002 (Expert Report); May 23, 2005 (Written Direct Examination); May 23, 2005 (Deposition), June 2, 2005 (Trial Testimony).

Deposition and Expert Submission of Dennis W. Carlton in Re: 2003 NPM Adjustment Proceeding pursuant to Master Settlement Agreement, November 22, 2005 (Deposition), October 10, 2005 (Expert Submission), January 30, 2006 (Expert Final Submission).

Declaration of Dennis W. Carlton in Re: Covad Communications, et.al. v. Bell Atlantic, et. al., Civil Action No.:1:99-CV-01046, June 10, 2005 (Declaration).

Joint Report by Dennis W. Carlton and Alan S. Frankel In the Matter of the Decision of the Office of Fair Trading dated 6 September 2005 No. CA 98/05/05 of 6 September 2005 in Case CP/0090/00/S, Competition Appeal Tribunal (U.K.), February 27, 2006 (Report).

Expert Report and Deposition of Dennis W. Carlton in Re: Fresh Del Monte Pineapples Antitrust Litigation In the United States District Court for the Southern District of New York, Civil Action No. 03-CV-10230 (RMB), February 3, 2006 (Expert Report); February 22, 2006 (Deposition).

Expert Report of Dennis W. Carlton in Re: Marjorie Ferrell, et al., v. Wyeth-Ayerst Laboratories, Inc., et al. In the United States District Court for the Southern District of Ohio, Civil Action No. C-1-01-447, May 3, 2006 (Expert Report).

Declaration of Dennis W. Carlton (with Hal Sider) in Re: AT&T Corporation and BellSouth Corporation., Application for Approval of Transfer of Control, in the Federal Communications Commission, WC Docket 06-74, March 29, 2006 (Declaration), June 19, 2006 (Reply Declaration), August 21, 2006 (Declaration).

Declaration of Dennis W. Carlton in Re: Wireless Telephone Services Antitrust Litigation, Michael Freeland, et al., on behalf of himself and others, v. AT&T Corporation, et al. In the United States District Court, Southern District of New York, Master File 02 Civ. 2637 (DLC) and Separate File 04 Civ. 8653 (DLC), May 5, 2006 (Declaration).

Declaration, Deposition, Direct Testimony and Rebuttal Testimony of Dennis W. Carlton in Re: Certain Baseband Processor Chips and Chipsets, Transmitter and Receiver (Radio) Chips, Power Control Chips, and Products Containing Same, Including Cellular Telephone Handsets, In the United States International Trade Commission, May 19, 2006 (Declaration), June 1, 2006 (Deposition), June 5, 2006 (Direct Testimony), June 7, 2006 (Rebuttal Testimony) July 10, 2006 (Live Testimony).

Expert Report, Supplemental Expert Report, Second Supplemental Expert Report, Reply Expert Report, Deposition, Statement, and Testimony of Dennis W. Carlton in Re: Verizon Services Corp., Verizon Communications Inc., MCI Communications Corp., and Verizon Business Global LLC vs. Cox Fibernet Virginia, Inc., Cox Virginia Telecom, Inc., Cox Communications Hampton Roads, LLC, CoxCom, Inc., and Cox Communications, Inc., in the US District Court for the Eastern District of Virginia, Case No. 1:08-cv-157 CMH-TRJ, May 30, 2008 (Expert Report), June 13, 2008 (Supp. Expert Report), July 2, 2008 (Second Supp. Expert Report), July 14, 2008 (Expert Report in Reply to Expert Report of Michael C. Keeley), July 29, 2008 (Deposition), September 17, 2008 (Statement), September 18, 22, and 29, 2008 (Testimony).

Declaration, and Reply Declaration of Dennis W. Carlton (with A. Shampine and H. Sider) in Re: Verizon Wireless and ALLTELL Holdings LLC, in the Federal Communications Commission, WT Docket 08-95, June 13, 2008 (Declaration), August 19, 2008 (Reply Declaration).

Initial Submission and Final Submission of Dennis W. Carlton in Re: 2006 NPM Adjustment Proceeding pursuant to Master Settlement Agreement, October 6, 2008 (Initial Submission Expert Report), January 16, 2009 (Final Submission Expert Report).

Expert Report of Dennis W. Carlton in Re: Rosemary D'Augusta et. al. v Northwest Airlines Corp and Delta Air Lines, Inc., in the US District Court for the Northern District of California, Civil Action No. :3:08-CV-3007 VRW, October 17, 2008 (Expert Report)

Declaration of Dennis W. Carlton in Re: Vibo Corp Inc. v Jack Conway in the US District Court Western District of Kentucky, Case No. 03:08-CV-571-JBC, December 1, 2008 (Declaration).

Expert Report, and Supplemental Expert Report of Dennis W. Carlton and Mark Israel in Re: Toys "R" Us-Delaware, Inc., and Geoffrey, Inc. v Chase Bank USA, N.A., for the American Arbitration Association New York, New York, No. 13-148-02432-08, February 27, 2009 (Expert Report), March 23, 2009 (Supplemental Expert Report).

Brief of Evidence, and Rebuttal Brief of Evidence of Dennis Carlton and Gustavo Bamberger in Re: New Zealand Commerce Commission, and DSE (NZ) Limited (and others) v Cards NZ Limited and others, in the High Court of New Zealand, Auckland Registry, CIV 2006-485-2693, May 4, 2009 (Brief of Evidence), September 7, 2009 (Rebuttal Brief of Evidence).

Expert Report, and Deposition of Dennis W. Carlton in Re: BoDeans Cone Company, et. al. v. Norse Dairy Systems; Interbake Foods, LLC, in the US District Court for the Northern District of Iowa Western Division, No. 5:09-CV-4014, July 31, 2009 (Expert Report), August 27, 2009 (Deposition).

Declaration and Deposition of Dennis W. Carlton in Re: Chicago Board Options Exchange, Incorporated, Dow Jones & Company, Inc., and the McGraw- Hill Companies, Inc., v. International Securities Exchange, LLC and the Options Clearing Corporation in the Circuit Court of Cook County, Illinois County Department, Chancery Division, No. 06 CH 24798, October 30, 2009 (Declaration), January 29, 2010 (Deposition).

Responses of Dennis Carlton in Re: Verizon Horizontal Merger Guidelines Review Project to the U.S. Department of Justice and Federal Trade Commission, November 9, 2009 (Responses).

Declaration of Dennis W. Carlton in the matter of Preserving the Open Internet Broadband Industry Practices, before the Federal Communications Commission in Washington D.C., GN Docket No. 09-191, January 14, 2010 (Declaration).

Declaration of Dennis W. Carlton and Hal Sider in Re: Special Access Rates for Price Cap Local Exchange Carriers, AT&T Corp. Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services, before the Federal Communications Commission in Washington D.C., WC Docket No. 05-25, January 19, 2010 (Declaration).

Report of Dennis W. Carlton and Gustavo E. Bamberger in Re: Air Canada. Toronto, Canada. February 5, 2010 (Report).

Exhibit 2

ALLAN SHAMPINE

February 2010

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332 South Michigan Avenue
Suite 1300 (312) 322-0294
Chicago, Illinois 60604-4306 Email: ashampine@compasslexecon.com

Home Address: 9810 Keystone Ave.
Skokie, IL 60076 (847) 673-2963

EDUCATION

Ph.D. UNIVERSITY OF CHICAGO: Economics, 1996
(Full scholarship from the University)
(Thesis: *An Evaluation of Technology Diffusion Models and Their Implications*)

M.A. UNIVERSITY OF CHICAGO: Economics, 1993
(Full scholarship from the University)

B.S. SOUTHERN METHODIST UNIVERSITY: Economics and Systems Analysis,
Mathematics Minor, 1991
(Summa Cum Laude, Honors, Departmental Distinction)

PROFESSIONAL EXPERIENCE

COMPASS LEXECON (formerly Lexecon), Chicago, Illinois: Vice President (2003-Present)

COMPASS LEXECON (formerly Lexecon), Chicago, Illinois: Economist (1996 - 2003)

UNIVERSITY OF CHICAGO: Teaching Assistant (1994 – 1996)

DEGOLYER SPECIAL COLLECTIONS LIBRARY (May - July 1991)

BARNES & NOBLE (May - July 1989)

UNIVERSITY OF TEXAS, Research Assistant to Dr. Brian Berry (May - July 1987)

OTHER PROFESSIONAL EXPERIENCE

Participant in “The Law and Economics of Interchange Fees and Credit Card Markets” symposium sponsored by International Center for Law & Economics (December 8-9, 2009).

“The Evaluation of Social Welfare for Payment Methods,” 2009 Oxford Business & Economics Conference (June 24-26, 2009).

Interviewed by *Cards Insider* for “Payments: Cash Replacement, Anonymity provides lifeline for cash over cards,” (January 28, 2008).

“Boom and Bust in Network Industries: Rising from the Ashes,” 6th Global Conference on Business & Economics, Harvard University (October 15-17, 2006), with Hal S. Sider.

“House of Cards: The Economics of Interchange Fees,” Presentation to the Federal Reserve Bank of New York Conference, *Antitrust Activity in Card-Based Payment Systems: Causes and Consequences* (September 16, 2005), with Alan S. Frankel.

“The Impact of Technology on the Modern Labor Market,” 68th Annual Meeting of the Southwestern Social Science Association (March 29, 1990)

Presented papers on information externalities and technology diffusion at the *Economics and Public Policy Workshop* (3) and *Price Theory Workshop* (1), University of Chicago (1995, 1996)

Coordinated the *Conference on Valuing Non-Market Goods*, University of Chicago (July 21-22, 1995)

Assisted in coordinating the *Conference on Research in Health Economics*, University of Chicago (October 21-22, 1994)

Assisted in organizing the *Economic Policy and Public Finance Workshop*, University of Chicago (1993 - 1996)

Member of the *American Economics Association*

Associate member of the *American Bar Association*

Referee for the *Agricultural and Resource Economics Review*, *American Journal of Agricultural Economics*, *Antitrust Law Journal*, *Journal of Business* and *Journal of Evolutionary Economics*.

Vestry (2007-2009), Treasurer (2006), St. Mary’s Episcopal Church, Park Ridge

ACADEMIC HONORS

Undergraduate:

Graduated Summa Cum Laude, Honors, Departmental Distinction

Award for Excellence (given to the outstanding senior in the Economics Department as decided by the vote of the faculty)

Presidential Scholarship (full scholarship)

National Merit Scholar (honorary)

Hyer Society (honorary society of Southern Methodist University)

Honor Roll (1987-1991)

Phi Beta Kappa

Alpha Lambda Delta (Treasurer, honorary society recognizing academic achievement)

Phi Eta Sigma (honorary society recognizing academic achievement)

Omicron Delta Epsilon (international honor society in economics)

Kappa Mu Epsilon (honor society in mathematics)

Graduate:

Full Scholarship (tuition and stipend)

FIELDS OF SPECIALIZATION

Telecommunications

Payment Systems

Technology Diffusion

PUBLICATIONS

BOOKS

Down to the Wire: Studies in the Diffusion and Regulation of Telecommunications

Technologies, (Editor) Nova Science Press (2003).

(Contributors include Debra Aron, Johannes Bauer, Peter Bernstein, David Burnstein, Robert Crandall, Nicholas Economides, Wayne Fu, Shane Greenstein, Charles Jackson, Junghyun Kim, Donald Kridel, Mercedes Lizardo, Paul Rappoport, Pablo Spiller, Lester Taylor and Steven Wildman)

ARTICLES

“Price Indexes, Hedonic Analysis and Patent Damages,” 5 *Journal of Intellectual Property Law & Practice* 2 (2010).

“Credit Cards in Context: Framing the Discussion” and “Assessing the Social Effects of the Use of Credit Cards” in “The Law and Economics of Interchange Fees and Credit Card Markets” symposium sponsored by International Center for Law & Economics (December 8-9, 2009), available at <http://www.truthonthemarket.com/category/interchange-and-credit-cards-symposium/>.

“Reasonable royalties and the sale of patent rights,” 4 *Journal of Intellectual Property Law & Practice* 8 (2009).

“The Evaluation of Social Welfare for Payment Methods,” *2009 Oxford Business & Economics Conference Proceedings*, June 2009.

“Another Look at Payment Instrument Economics,” *6 Review of Network Economics* 4 (2007).

“The Telecom Boom and Bust: Their Losses, Our Gain?” with Hal Sider, *Milken Institute Review* (October 2007).

“Boom and Bust in Network Industries: Rising from the Ashes,” with Hal Sider, *International Journal of Business & Economics, Proceedings* (2006).

“The Economics of Interchange Fees,” with Alan Frankel, *73 Antitrust Law Journal* 3 (2006).

“Handicapping Countries in the Race to Digital Switching,” *5 Review of Network Economics* 2 (2006).

“The Evolution of Telecommunications Switching in the Central Office,” in Down to the Wire: Studies in the Diffusion and Regulation of Telecommunications Technologies, Nova Science Press (2003).

“The Welfare Implications of Advertising and Extension Under Uncertainty,” with George Tolley, *Technological Forecasting & Social Change* 70 (2003).

“Determinants of the Diffusion of U.S. Digital Telecommunications,” *Journal of Evolutionary Economics* 11 (2001).

“Compensating for Information Externalities in Technology Diffusion Models,” *80 American Journal of Agricultural Economics* 2 (1998).

Contributor to Guide to the Western Ephemera Collection at the DeGolyer Library, Southern Methodist University, 1993, edited by Kristin Jacobsen.

“The Impact of Technology on the Modern Labor Market,” *11 Southwestern Journal of Economic Abstracts* 1 (1990).

RESEARCH PAPERS

“An Evaluation of Online Investment Bank Research,” with Rajiv Gohkhale (2010).

“A New Direction in Mixed Income Housing,” submitted to Chicago Housing Authority (1993).

“A Survey of the Economics of Information, Focusing on Water” (1992).

“Petroleum Price Shocks and Rationality,” B.S. Honors Paper (1991).

EXPERT TESTIMONY

Reply Declaration to the Federal Communications Commission, Verizon Wireless / ALLTEL transaction (WT Docket No. 08-95), August 19, 2008 (with Dennis Carlton and Hal Sider).

Declaration to the Federal Communications Commission, Verizon Wireless / ALLTEL transaction (WT Docket No. 08-95), June 13, 2008 (with Dennis Carlton and Hal Sider).

Ex parte filing before the Federal Communications Commission on behalf of Verizon, “Verizon/MCI Merger: Analysis of Special Access,” September 9, 2005 (with Gustavo Bamberger and Dennis Carlton).

Comments to the New York Public Service Commission, In the Matter of the Joint Petition of Verizon Communications, Inc. and MCI, Inc. for a Declaratory Ruling Disclaiming Jurisdiction Over or, in the Alternative, for Approval of Agreement and Plan of Merger; and Joint Petition of SBC Communications Inc., AT&T Corporation, Together with its Certificated New York Subsidiaries, for Approval of Merger (CASE 05-C-0237 and CASE 05-C-0242), August 5, 2005 (with Gustavo Bamberger and Dennis Carlton).

Reply Declaration to the Federal Communications Commission, In the Matter of Verizon Communications Inc. and MCI, Inc., Application for Approval of Transfer of Control (WC Docket No. 05-75), May 24, 2005 (with Gustavo Bamberger and Dennis Carlton).

Declaration to the Federal Communications Commission, In the Matter of Verizon Communications Inc. and MCI, Inc., Application for Approval of Transfer of Control (WC Docket No. 05-75), March 9, 2005 (with Gustavo Bamberger and Dennis Carlton).

Reply Declaration to the Federal Communications Commission, In the Matter of Section 272(f)(1) Sunset of the BOC Separate Affiliate and Related Requirements (WC Docket No. 02-112) and 2000 Biennial Regulatory Review of Separate Affiliate Requirements of Section 64.1903 of the Commission’s Rules (CC Docket 00-175), July 28, 2003, (with Dennis Carlton and Hal Sider).

Declaration to the Federal Communications Commission, In the Matter of Section 272(f)(1) Sunset of the BOC Separate Affiliate and Related Requirements (WC Docket No. 02-112) and 2000 Biennial Regulatory Review of Separate Affiliate Requirements of Section 64.1903 of the Commission’s Rules (CC Docket 00-175), June 30, 2003, (with Dennis Carlton and Hal Sider).

Reply Declaration Re: 2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Services, Before the Federal Communications Commission, Washington DC, WT Docket No. 01-14, May 14, 2001, Reply Declaration (with Robert Gertner).

Declaration Re: 2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Services, Before the Federal Communications Commission, Washington DC, Docket No. 01-14, April 13, 2001, Declaration (with Robert Gertner).

Report to Directorate General IV of the European Commission: “Remedies in the United States,” in *Remedies in the United States*, in *Remedies in EU Competition Law: The Policy and Practice of the European Commission, A Report for Directorate General IV of the European Commission*, July 1998, Report (with James Langenfeld).

Exhibit 3

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EDUCATION

Ph.D., UNIVERSITY OF WISCONSIN, Madison, Wisconsin: Economics, 1980.

M.A., UNIVERSITY OF WISCONSIN, Madison, Wisconsin: Economics, 1978.

B.A., UNIVERSITY OF ILLINOIS, Urbana, Illinois: Economics, 1976.

EMPLOYMENT

COMPASS LEXECON (formerly Lexecon), Chicago, Illinois (October 1985 - present):
1985-90: Economist; 1990-1999: Vice President; 1999-current: Senior Vice
President.

U.S. COMMISSION ON CIVIL RIGHTS, Washington, D.C., (August 1984 - October
1985): Co-Director: Project on Minority Income Trends.

OFFICE OF POLICY: U.S. DEPARTMENT OF LABOR, Washington, D.C., (May 1982 -
August 1984): Economist.

PRESIDENT'S TASK FORCE ON FOOD ASSISTANCE (on leave from U.S. Department
of Labor), Washington, D.C., (September 1983 - February 1984): Research
Associate.

OFFICE OF RESEARCH AND EVALUATION; BUREAU OF LABOR STATISTICS,
Washington, D.C., (September 1980 - May 1982): Economist.

UNIVERSITY OF WISCONSIN, Madison, Wisconsin (1978 - 79): Teaching Assistant.

UNIVERSITY OF WISCONSIN, Madison, Wisconsin (1976 - 78): Science Writer.

FIELDS OF SPECIALIZATION

Applied Microeconomics
Econometrics
Industrial Organization
Telecommunications
Labor Economics

ARTICLES

- “Antitrust, Regulation and *Trinko*,” in The Antitrust Revolution: Economics, Competition and Policy, J. Kwoka and L. White, eds. (forthcoming) with Dennis W. Carlton
- “The Telecom Boom and Bust,” Milken Institute Review, (forthcoming) with Allan Shampine.
- “Have Mergers of Large Local Exchange Carriers Led to Discrimination Against Rivals? An Empirical Investigation” July 2002 in Econometrics: Legal, Practical and Technical Issues, American Bar Association Section on Antitrust Law (2005) (with Dennis Carlton and Tom Stemwedel).
- “Recent Developments in U.S. Antitrust Enforcement,” The United States Antitrust Review, October 1999 (with Gustavo Bamberger).
- "Market Power and Vertical Restraints in Retailing: An Analysis of FTC v. Toys ‘R’ Us,” in The Role of the Academic Economist in Litigation Support, edited by Daniel Slottje (1999), with Dennis Carlton.
- "The Competitive Effects of Line-of-Business Restrictions in Telecommunications," Managerial and Decision Economics (1995), with Kenneth Arrow and Dennis Carlton. (Reprinted in R. Higgins and P. Rubin, eds., Deregulating Telecommunications: The Baby Bells' Case for Deregulation, Wiley Series in Managerial Economics, 1995.)
- "Applications of Economic Theory and Econometric Methods to Merger Review in the United States," (paper presented to European Commission Merger Task Force, 1992), with A. Rosenfield and W. Bishop.
- "Unemployment Incidence and Duration: 1968-1982," American Economic Review (June 1985).
- "The Pay Gap and Occupational Segregation: Implications for Comparable Worth," Proceedings of the Industrial Relations Research Association (1985), with June O'Neill.
- "Work-Related Accidents and the Production Process," Journal of Human Resources (Winter 1985).

"Labor Force Participation and the Relative Earnings of Black and White Males: 1940-80," with Andy Sparks, (paper presented at the World Congress of the Econometric Society, 1985).

"Comment on McIntyre: Estimating Long-Term Labor Market Flows from CPS Data," Proceedings: Conference on Applications of Gross Flow Data, U.S. Bureau of the Census (1985).

"The Changing Makeup of the Military and the Effect on Labor Force Data," Monthly Labor Review (July 1984), with Cheryl Cole.

"Accuracy of Response in Labor Market Surveys: Evidence and Implications," Journal of Labor Economics (October 1983), with Wesley Mellow.

"Safety and Productivity in Underground Coal Mining," Review of Economics and Statistics (May 1983).

"Economic Incentives and Safety Regulation," American Economist (Summer 1983).

"Consumers and Product Safety: Market Processes and Imperfections," Policy Studies Journal (February 1983), with Eugene Smolensky.

REPORTS

The Economic Progress of Black Men in America, U.S. Commission on Civil Rights (1986).

Economic Status of Americans of Eastern and Southern European Ancestry, U.S. Commission on Civil Rights (1986).

Report of the President's Task Force on Food Assistance, Curran Press, Alexandria, Virginia (1984).

MISCELLANEOUS

University-Industry Dissertation Fellowship, University of Wisconsin, 1979-80.

Referee for:

Journal of Human Resources
Journal of Industrial Economics
Journal of Labor Economics
Journal of Law and Economics

Journal of Legal Studies
National Commission on Employment Policy

National Science Foundation
Policy Studies Journal
Review of Economics and Statistics
Social Science Research Council
U.S. Department of Health and Human Services
Antitrust Law Journal

TESTIMONIAL EXPERIENCE

In the Matter of Special Access Rates for Price Cap Local Exchange Carriers, Federal Communications Commission, WC Docket No. 05-25. Declaration (January 19, 2010), on behalf of AT&T Inc., (with Dennis Carlton).

In the Matter of Verizon Wireless and ALLTEL Holdings LLC, Federal Communications Commission, WT Docket 08-95. Declaration (June 13, 2008), Reply Declaration (August 19, 2008), on behalf of Verizon Wireless, (with Dennis Carlton and Allan Shampine).

Alaska Interstate Construction, L.L.C., et al. v. Pacific Diversified Investments Inc., et al., Superior Court of the State of Alaska, Third Judicial District at Anchorage, Case No. 3AN-05-7921 CI. Expert Report (October 9, 2006), on behalf of Alaska Interstate Construction, L.L.C., et al.

In the Matter of AT&T Corporation and BellSouth Corporation., Application for Approval of Transfer of Control, Federal Communications Commission, WC Docket 06-74. Declaration, (March 29, 2006), Reply Declaration (June 19, 2006), Declaration (August 21, 2006) on behalf of AT&T and BellSouth, (with Dennis Carlton).

In the Matter of Arbitration of Nextel Partners, Inc. and Nextel Partners Operating Corp., against Nextel Communications, Inc. and Nextel WIP Corporation, International Institute for Conflict Prevention and Resolution, CPR No. G-05-33H. Declaration, (August 8, 2005), Supplemental Declaration (August 22, 2005), on behalf of Nextel Partners, Inc. and Nextel Partners Operating Corp.

Joint Application of SBC Communications Inc., AT&T Corporation, and its Certified Pennsylvania Subsidiaries, AT&T Communications of Pennsylvania, LLC, TCG Pittsburgh, and TCG Delaware Valley, Inc., for Approval of Merger, Pennsylvania Public Utility Commission Docket No. A-311163F0006, A-310213F0008, A-310258F0005. Direct Testimony (May 11, 2005), Rebuttal Testimony (July 15, 2005), Rejoinder Testimony (July 18, 2005), on behalf of SBC and AT&T, (with Dennis Carlton).

In the Matter of Proposed Merger of SBC Communications and AT&T Corp., New Jersey Board of Public Utilities. Direct Testimony (May 4, 2005), Rebuttal Testimony (June 5, 2005), on behalf of SBC and AT&T, (with Dennis Carlton).

In the Matter of SBC Communications Inc. and AT&T Corp., Application for Approval of Transfer of Control, Federal Communications Commission, WC Docket No. 05-65. Declaration (February 21, 2005), Reply Declaration (May 10, 2005), Ex Parte Presentations (June 28, 2005, July 6-7, 2005, and July 18, 2005), on behalf of SBC and AT&T, (with Dennis Carlton).

In the Matter of AT&T Corp. v. BellSouth Telecommunications, Inc., Federal Communications Commission, File No. EB-04-MD-010. Declaration (July 20, 2004), on behalf of BellSouth Telecommunications, Inc., (with Dennis Carlton).

FoodComm International v. Patrick James Barry et al., United States District Court for the Northern District of Illinois. Expert Report (December 2003), Deposition (January 28, 2004), Supplemental Expert Report (January 2007), on behalf of FoodComm International, (with David Gross).

In the Matter of Section 272(f)(1) Sunset of the BOC Separate Affiliate and Related Requirements, Federal Communications Commission, WC Docket No. 02-112 and CC Docket 00-175, 2000 Biennial Regulatory Review of Separate Affiliate Requirements of Section 64.1903 of the Commission's Rules. Declaration (June 30, 2003), Reply Declaration (July 28, 2003), on behalf of Qwest, Verizon and SBC, (with Dennis Carlton and Allan Shampine).

Report to the Civil Rights Division of the U.S. Department of Justice, Racial Differences in Citations for Traffic Violations in Cleveland, Ohio, (June 27, 2003) on behalf of the U.S. Department of Justice, (with David Gross).

Sunrise International Leasing Corporation v. Sun Microsystems, Inc., United States District Court for the District of Minnesota, No. 01-CV-1057 (JMR/FLN). Affidavit (January 2003, relating to discovery issues), Affidavit (March 2003, relating to damage issues, with Dennis Carlton), on behalf of Sun Microsystems.

Mesler v. Prudential Insurance, et al., Circuit Court of Cook County, Illinois, No. 99 L 37. Expert Report (November 2002), Deposition Testimony (January 30, 2003 and March 6, 2003), on behalf of Prudential Insurance, et al.

MHC Financing Limited Partnership v. City of San Rafael, United States District Court for The Northern District of California. Expert Report (September 13, 2002), Supplemental Report (September 30, 2002), on behalf of MHC, (with Daniel R. Fischel).

In the Matter of Inquiry Concerning High-Speed Access to Internet over Cable and Other Facilities, Federal Communications Commission, Docket GN No. 00-185. Joint Declaration (May 2002), on behalf of Verizon, (with K. Arrow, G. Becker, D. Carlton, R. Gertner, D. Fischel, J. Kalt, and G. Bamberger).

In the Matter of Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services, Federal Communications Commission, CC Docket No. 01-337, FCC 01-360. Declaration (March 2002), (with Dennis Carlton), (May 2002, and July 2003), on behalf of Verizon, (with Dennis Carlton and Gustavo Bamberger).

White-Janes v. Chicago Board of Education, U.S. District Court for the Northern District of Illinois, Eastern Division, CA No. 00C-6128. Expert Report (March 2002), Supplemental Report (April 2002), Deposition Testimony (May 2002), and Supplemental Report (November 2002), on behalf of White-Janes.

- Dean Foods, Kraft Foods, Ralston Purina Company, Nabisco, Inc. and McKee Foods v. Eastman Chemical, et al., United States District Court, Northern District of California, San Francisco Branch. Declaration (February 2002), Reply Declaration (May 2002), Supplemental Declaration (June 2002), on behalf of Dean Foods, et al.
- Forest Laboratories, Inc. v. G.D. Searle and Co., U.S. District Court for the Northern District of Illinois, Eastern Division, CA No. 98C-5170. Expert Report (April 2001), on behalf of Forest Laboratories, (with David Gross).
- In the Matter of Auction Houses Antitrust Litigation. United States District Court Southern District of New York, Master File No. 00 Civ 0648 (LAK). Declaration (February 2001), on behalf of Sotheby's Holdings Inc., (with William Landes).
- In the Matter of Joint Application of Northpoint Communications and Verizon Communications for Authority to Transfer Control of Blanket Authorization to Provide Domestic Interstate Telecommunications Services as a Non-Dominant Carrier. Federal Communications Commission, CC Docket No. 00-157. Reply Declaration (October 2000), on behalf of Verizon and Northpoint, (with Dennis Carlton).
- Gray et al. v. Monarch Luggage Company, Inc., 99 C 04345. Expert Report (August 2000), on behalf of Howard Cassandra Gray.
- Erickson v. Alpha Therapeutic, et. al., USDC for the Northern District of Illinois Eastern Division - 99C 0426. Expert Report (July 2000), on behalf of Alpha Therapeutic, et. al.
- Vitamin Antitrust Litigation, United States District Court for the District of Columbia, MDL No. 1285. Expert Report (June 2000) (with William M. Landes relating to discovery issues), Expert Report (May 2002) (with William M. Landes and Gustavo Bamberger relating to damages), Reply Expert Report (July 2002) (with William M. Landes and Gustavo Bamberger relating to damages), Declaration (August 2002) (with William M. Landes and Gustavo Bamberger relating to present value calculation), Deposition Testimony (August 7-8, 2002 and August 27, 2002), Declaration (November 2002) (with William Landes and Gustavo Bamberger relating to niacin damage issues), on behalf of opt-out plaintiffs.
- Gas City, Ltd. v. Indiana Department of Transportation, Circuit Court of St. Joseph County, Indiana. Affidavit (March 2000), on behalf of Gas City.
- In the Matter of Joint Application of MCI WorldCom and Sprint for Consent to Transfer Control. Federal Communications Commission, CC Docket No. 99-333. Declaration (February 2000), Ex Parte Declaration (May 2000), on behalf of SBC, (with Dennis Carlton).
- In the Matter of Merger of Qwest Communications International Inc. and U S WEST, Inc., Federal Communications Commission, CC Docket No. 99-272. Declaration (October 18, 1999), Ex Parte Comments (February 2000), on behalf of Qwest and U S WEST, (with Dennis Carlton).

In the Matter of the Merger of SBC Communications Inc. with Ameritech Corporation.
Federal Communications Commission, CC Docket No. 98-141. Affidavit and Report (July 1998), Reply Affidavit and Reply Report (April 1999) Ex Parte Report (April 1999), on behalf of SBC and Ameritech, (with Dennis Carlton).

Riverside Pipeline Co., v. Panhandle Eastern Pipeline Co., United States District Court for the Western District of Missouri, Case No. 97-0642-CV-W-4. Expert Report (September 1998) on behalf of Panhandle Eastern Pipeline Co., (with Dennis Carlton).

Lemon, Myer, Duncan et al. v. International Union of Operating Engineers, et al., United States District Court for the Eastern District of Wisconsin, Case No. 97-C-0857. Affidavit (September 1998), Affidavit (December 1999), Deposition (February 2000), Supplemental Report (March 2000), on behalf of International Union of Operating Engineers.

In the Matter of Application of WorldCom, Inc., Corp., for Approval to Transfer Control of MCI Communication to WorldCom, Inc., Department of Public Service of the State of West Virginia. Testimony (June 17, 1998), Oral Testimony (July 2, 1998), on behalf of WorldCom.

In the Matter of the Application of WorldCom, Inc. and MCI Communications Corporation for Approval to Transfer Control of MCI Communications Corporation to WorldCom, Inc., Department of Public Service Regulation, Public Service Commission of the State of Montana, Docket No. D97.10.191. Testimony (May 12, 1998), on behalf of WorldCom.

Application of WorldCom, Inc. for Approval to Transfer Control of MCI Communications Corporation to WorldCom, Inc., Public Utilities Commission of the State of Colorado, in re Docket No. 97A-494T. Testimony (March 26, 1998), Cross-Examination (April 2, 1998), on behalf of WorldCom.

Petition of WorldCom, Inc. for Approval to Transfer Control of MCI Communications Corporation to WorldCom, Inc., Florida Public Service Commission, Docket No. 971375-TP. Affidavit (February 27, 1998), on behalf of WorldCom, (with Dennis Carlton).

In the Matter of Application of WorldCom, Inc. for Approval to Transfer Control of MCI Communications Corporation to WorldCom, Inc., New York State Public Service Commission, Case 97-C-1804. Affidavit (February 16, 1998), on behalf of WorldCom, (with Dennis Carlton).

In the Matter of Applications of WorldCom, Inc. and MCI Communications Corporation for Transfer of Control of MCI Communications to WorldCom, Inc., Federal Communication Commission, CC Docket No. 97-211. Declaration (January 25, 1998), Second Declaration (March 19, 1998), on behalf of WorldCom and MCI, (with Dennis Carlton).

Shuller v. United States, U.S. District Court for the Eastern District of Pennsylvania, Civil Action No. 97-3820. Expert Report (February 1998), on behalf of U.S. Department of Justice.

Smith v. Amtrak, Circuit Court of Cook County, IL, Case 92 L 10525. Deposition (November 1997), Trial Testimony (January 1998), on behalf of Smith.

Johnson and Lehl v. City Colleges of Chicago, U.S. District Court for the Northern District of Illinois Eastern Division Case No. 96 C 0862. Expert Report (July 1997), Deposition Testimony (October 1997), on behalf of City Colleges of Chicago.

Gelumbauskas v. Precision Gear, U.S. District Court, Northern District of Illinois Eastern Division, Case No. 96 C 0862. Expert Report (April 1997), on behalf of Gelumbauskas.

Galvan v. U.S. Industries, Deposition Testimony (January 1997), Expert Report (December 27, 1996), on behalf of U.S. Industries.

Sprint Communications Company L.P. v. Network 2000 Communications Corporation, Expert Report (July 15, 1996), Deposition Testimony (July and August 1996), Affidavit (November 9, 1996), on behalf of Sprint, (with Dennis Carlton).

Beazer East v. CSX Transportation, Inc., U.S. District Court for the Western District of Pennsylvania, Case No. 93 0861. Expert Report (May 1996), Deposition Testimony (June 1996), on behalf of CSX.

Report to National Association of Independent Insurers, Response to the National Association of Insurance Commissions Staff: Analyses of the Availability and Affordability of Urban Insurance, (May 1996).

Carbon Dioxide Industry Litigation, U.S. District Court for Central District of Florida MDL940. Expert Report (October 1994) (with William M. Landes), Supplemental Report (May 1995) (with William M. Landes and Richard Leftwich), Deposition Testimony (July 1995), on behalf of opt-out plaintiffs.

AVR, Inc. v. Cemstone Products Corp., U.S. District Court, District of Minnesota, Third Division, File CIV 3-92-551. Expert Report (October 1994), Supplemental Affidavits (December 1994 and January 1995), on behalf of Cemstone.

W. Borysiewicz v. M. Gilblair, Circuit Court of Cook County, Illinois. Deposition Testimony (August 1994), and Trial Testimony (September 1994) on behalf of Borysiewicz.

NAACP et al. v. American Family Mutual Insurance Co., U.S. District Court, Eastern District of Wisconsin, Civil Action No. 90-C-0759. Deposition Testimony (July 1994 and November 1994), on behalf of American Family.

G. Bowan v. The Sales Force Companies, U.S. District Court for The Western District of Missouri, Case No. 92-0496-CV-W-2. Affidavit (February 1993), on behalf of Sales Force.

Wisconsin Central Transportation Corporation -- Continuance in Control -- Fox Valley and Western Ltd., Finance Docket 32036, Interstate Commerce Commission. Expert Report (September 1992), on behalf of Wisconsin Central, (with Andrew M. Rosenfield).

Castaneda v. Baron Wire and Steel Inc., Circuit Court of Cook County, Illinois, Municipal Department, Second District. Deposition Testimony (February 1992), on behalf of Castaneda.

Morgan v. ServiceMaster, U.S. District Court for the Northern District of Illinois, Case No. 89-C-0581. Report (September 1991), on behalf of ServiceMaster, (with Sherwin Rosen).

Sepich v. Mueller, U.S. District Court for the Central District of Illinois, U.S. District Court, Case No. 88-2353. Report (March 1991), on behalf of Mueller, (with Sherwin Rosen).

N. Savakis v. Beatrice Company, U.S. District Court for the N.E. District of Illinois Eastern Division, No. 89 C5790. Expert Report (June 1990), on behalf of Beatrice.

Times Herald Printing Company v. A.H. Belo Corp. and Dallas Morning News Company, District Court of Harris County Texas, 280th Judicial District. Deposition Testimony (April 1990), on behalf of Dallas Morning News.

Turner v. IDS Financial Services, Inc., U.S. District Court for the District of Minnesota, File No. 88-521. Report (November 1989), on behalf of IDS.

McLendon et al. v. Continental Group et al., U.S. District Court for the District of New Jersey, Civil Action No. 83-1340 (SA). Trial Testimony (February 1989), Testimony before Special Master (February 1990), Testimony before Special Master (August 1990), on behalf of Continental Group, (with Sherwin Rosen).

Application of Illini Carrier L.P. to provide natural gas transportation services, Testimony (April 1988), on behalf of Illini Carrier.